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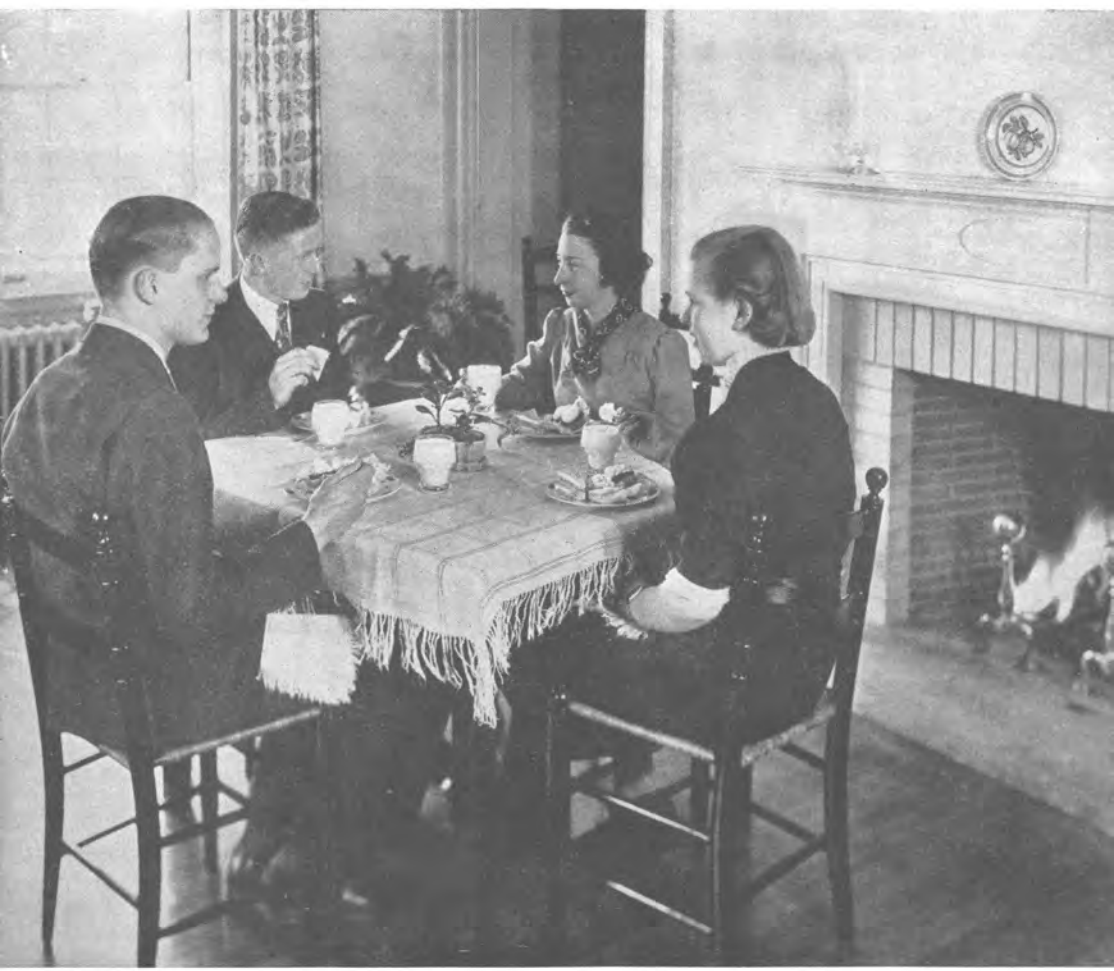
WHAT FOODS TO EAT AND WHY

FOODS AND NUTRITION HANDBOOK FOR 4-H CLUB MEMBERS

ANNE R. MATTHEWS AND THERESE E. WOOD



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CONTENTS

	PAGE
The needed foods	7
Weight as an indication of health	11
Milk and milk products	12
Milk	12
Food value	12
Protein	15
Sugar	15
Fat	15
Minerals	15
Vitamins	15
Kinds	15
Raw	15
Pasteurized	16
Evaporated and dried	16
Milk products	16
Skimmilk and buttermilk	16
Butter	17
Margarines	17
Cheese	17
Cottage cheese	17
Vegetables and fruits	18
Food value	18
Energy	20
Protein	20
Minerals	20
Vitamins	21
The importance of apples	22
The importance of potatoes	23
Effect of cooking	24
Eggs	25
Food value	25
Protein	26
Minerals	26
Vitamins	27
Meats, poultry, fish	27
Food value	28
Protein	29
Minerals	29
Vitamins	29
Liver	29
Questions asked	29
How much meat should a young person eat daily?	29
Is meat easily digested?	30
Is meat broth nourishing?	30
Amount of meat to buy	30
Foods from grains	30
Whole-grain foods	32
Minerals	32
Vitamins	33
Bulk	33
Wheat	33
Water	34
Sweets	36
Effect of sugar	38
Where sugars come from	39
Natural sugars	39
Refined sugars	39
Sirups	40
Cautions	40

PAGE

Meal planning, table setting, service, and manners 41
Meal planning 41
Making meals attractive 42
Three meals a day 43
Breakfast 43
Lunch or supper 44
At home 44
At school 45
Dinner 48
Table setting 49
Linen 49
The cover 50
Arrangement 50
Table service 52
Informal family service 53
Serving oneself at the table 54
Serving plates in the kitchen 55
Buffet service 55
Setting the table 55
Serving 56
Table manners 56
The use of flat silver 57
Recipes 60
General information 60
Milk 60
Vegetables and fruits 62
Eggs 67
Meat, poultry, and fish 71
Cereal foods 76
Sweets 81
Sandwich fillings 82
Index 83

WHAT FOODS TO EAT AND WHY

FOODS AND NUTRITION HANDBOOK FOR 4-H CLUB MEMBERS

ANNE R. MATTHEWS AND THERESE E. WOOD

JANET and Paul live on neighboring farms. Each owns a calf. Janet keeps chickens; Paul has a vegetable garden. Both have been enthusiastic 4-H Club members for several years. One night recently Janet invited Paul, his chum Jerry, and her best friend, Marjorie, to Sunday-night supper. Jerry brought with him the picture that you see on this page, of a national 4-H health winner.

"I wonder how he gets that way!" sighed Paul.

"By always eating the right food, I'll wager!" replied Janet, who had just been working on a food program in her 4-H unit.

"It takes more than right food to make you perfectly healthy," Marjorie remarked. She had been hearing about what good posture can do for one's health.

FIGURE 1. A NATIONAL 4-H CLUB HEALTH CHAMPION
Daily practice of good food and health habits made this boy a winner

"You're right—it takes fresh air, sunshine, exercise—a lot of things like that," Jerry added. "He is a good athlete."

Paul looked first at one, then at the other. Then, rubbing his hand over his hair in a way he has when he is thinking hard, he said, "Well, here we four sit, pretty healthy, I admit, but not counted in with the 'healthiest group.' If all it takes is some sense to eat the right things and do the right things, why don't we have that much sense?"

His chum laughed. He had kept training for three seasons and he knew the answer to that.

"You have plenty of sense, but you don't have the other thing it takes to do this without a boss over you. You may be good, but to be outstanding in anything—swimming, tennis, football, baseball, skating, or just plain good all-round health— you have to have that one thing."

"What?" asked three voices.

"Persistence! You have to be able to stick to training, not just for a week or a month, but for years. And I know what I'm talking about. If I didn't have the coach and the other fellows with me all the time, I wouldn't be able to stick it out."

"What do you mean—we don't have what it takes?" Paul was indignant. "Let's show him, girls! Let's begin right now, all four of us, and train to be 'tops' in health. We can ask our 4-H Club leader to help us. A year from tonight we'll get together again, and see what improvement we've made."

That was the beginning of the making of this bulletin. Janet agreed to find just what foods are best for the building of healthy bodies; Marjorie said she would find all about posture and its effect on health; and the boys were to gather information on other health habits that they ought to know. They found that sleep, cleanliness, and freedom from constipation, all contribute to good health.

Janet thought the meals would be much more interesting if she could find just what each kind of food does toward helping one to keep fit, and she was wise enough to realize, too, that no matter how good food is for one, it is more apt to be eaten entirely if it is well cooked and attractively served.

So for these four young people, and for you and you and you, who are really interested in making your bodies the best machines possible for enjoyable living, questions about the essential food habits for good health are here answered. Other essentials of good health include daily exercise, at least from nine to ten hours of sleep each night, rest each day, regular bowel movements, the brushing of teeth at least twice a day, and at least two complete baths a week.

If you want to make your body stronger, more enduring, more beautiful, you can make a pact with yourself, as these four did, to find what to do to improve your health, and then do it faithfully for one year, with only your own will power to keep you in training. You can have a lot of fun doing it too!

THE NEEDED FOODS

A 4-H CLUB boy weighs 100 pounds. What makes up that hundred pounds? About two-thirds of it is water. The muscles and soft parts of his body are protein; nearly one-seventh of his weight is fat; most of his skeleton and parts of all his body tissues are formed of salts; and

FIGURE 2. A 4-H CLUB BOY KEEPS IN TRIM

sugar is found in all of his tissues. All of these rather simple substances that make up his complicated living body need renewal and this is done by eating and breathing.

This boy, and you, eat because you are hungry; but whether hungry or not, you have to eat in order to live. Food, which consists of six groups of foodstuffs—carbohydrates, proteins, fats, minerals, vitamins, and water

TABLE 1. THE FOODSTUFF: WHAT IT DOES, AND ITS SOURCE

Name of foodstuff	What it does for you	Best sources for you
CARBOHYDRATES		
Starches	Supply energy for growth, activity, and maintenance of body temperature	Cereals, bread, potatoes, rice, macaroni, and tapioca
Sugars	Supply energy for growth, activity, and maintenance of body temperature	Sweets including honey, molasses, and dried fruit
Cellulose	Gives bulk which aids in normal bowel elimination Is not absorbed in body	Fruits, especially dried fruits and fresh raw fruits Vegetables Whole-grain breads and cereals
FATS	Supply energy for growth, activity, and maintenance of body temperature	Butter, oils, bacon, cream, peanut butter, nuts, and egg yolks
PROTEIN	Builds and maintains flesh and blood, and also gives some energy	Meat, poultry, fish, eggs, milk, cheese, nuts, dried peas, and beans
MINERALS	Aid in building tissues and keeping body in good running order	
Calcium	Necessary for strong bones and teeth Important in normal contraction of muscles and the rhythmic beat of the heart Helps nerves to respond normally	Milk, cheese, orange juice, molasses, and green leafy vegetables
Phosphorus	Necessary for strong bones and teeth Needed for proper working of every cell in the body Aids in keeping the blood neutral—neither acid nor alkaline	Milk, whole-grain breads and cereals, American cheese, and eggs Sea food and dried beans Lean meat, liver, and nuts
Iron	Needed for red corpuscles of the blood Needed by every active cell in the body as a stimulator	Egg yolk, vegetables, especially dark green leafy vegetables, dried fruits (apricots, prunes, figs), whole-grain breads and cereals, rolled oats, liver, molasses, navy beans, and lean meat
Copper	Helps the body to use the iron in red-blood formation	Liver, oysters, whole-grain cereals, fruits, and vegetables
Iodine	Needed for thyroid gland in preventing goiter	Sea foods and cod-liver oil
VITAMINS		
Vitamin A	Is essential for: Growth Good health at all ages Successful reproduction Healthy condition of membranes in various parts of the body; such as eyes, lungs, skin, and kidneys, thus helping to protect against infection Normal vision, especially in dim light	Cod-liver oil, halibut-liver oil, salmon, and other fish oils Butter, whole milk, cream, and cheese made from whole milk Egg yolk Liver and kidney Yellow and green leafy vegetables and tomatoes Many foods having a yellow or green color

Table concluded on page 9

TABLE 1 (*Concluded*)

Name of foodstuff	What it does for you	Best sources for you
Vitamin B	Is essential for: Growth Good health at all ages Normal appetite Good digestion Successful reproduction and lactation	Whole-grain breads and cereals Liver and lean pork Dried peas and beans Nuts Milk Egg yolk Yeast Orange and tomato juice Fruits and vegetables in general
Vitamin C	Is essential for: Growth Good health at all ages Good teeth and healthy gums Strength of blood vessel walls	Oranges, lemons, and grapefruit (raw or canned) Tomatoes (raw or canned) Raw cabbage, raw peppers, and spinach While they contain only moderate amounts of vitamin C, raw apples, onions, turnips, and cooked potatoes may be important sources because they are cheap and plentiful
Vitamin D	Is essential for: Growth Good health at all ages Good bones and teeth (by regulating the use of calcium and phosphorus in the body)	Sunshine Cod-liver oil, halibut-liver oil, salmon, and other fish oils Egg yolk and liver Foods enriched with vitamin D, such as Vitamin-D milk
Pellagra-preventive factor (This and riboflavin were previously included under the term ***vitamin G***)	Prevents the symptoms of pellagra, a disease which affects the skin, the digestive tract, and the nervous system	Fresh lean meat, liver, and kidney Milk (fresh, evaporated, and dried) Buttermilk Salmon (fresh and canned) Tomatoes Yeast Wheat germ
Riboflavin	Is known to be essential for several species of animal and indirect evidence suggests that it is important also to man	Heart, liver, and kidney, and lean meat Milk and cheese Eggs Green vegetables Yeast Wheat germ
WATER	Assists in regulating body temperature Assists in digestion, elimination, and blood circulation	Water Milk Cocoa Fruit juices Fruits and vegetables Soups

—is supplied to all parts of the body by the blood stream, but before the food eaten can be taken up by the blood, it must first be changed into simpler forms in the alimentary canal. Your alimentary canal, which begins with the mouth and ends with the colon, is about five times as long as you are.

Now the only way in which food can get into the alimentary canal to be changed miraculously into muscle, bone, cartilage, and blood, is through the mouth. And you are the one who decides what shall go into your mouth to be swallowed and used as "building blocks" for the body. If you put certain things in, your body will receive the materials it needs for growth and health and will be helped to make you feel and look vigorous and happy. By choosing the foodstuffs needed, you help yourself toward a good complexion, sound teeth, strong bones, and a good appetite. When feeling "on top of the world" is such an enjoyable sensation, it seems foolish not to do all you can to feel that way every minute, doesn't it?

One thing every boy and girl can do is to eat, every day, some or most of the foods that contribute to health. Easy, you say? Have you tried it? It takes effort at first! Read this bulletin and find what the different foods can do for you, and then stop saying, "I can't eat eggs—I hate 'em!" or "I never did care for vegetables—pass me the rolls instead!" or "I'll eat just three more pieces of candy—they won't spoil my appetite for dinner!"

Try doing for one year what Janet, Marjorie, Paul, and Jerry are doing, and probably you will never go back to the old way of being thoughtless or unintelligent about the choice of food. The following pages show what these four learned about the intelligent selection of foods.

What food does for the body

Food is anything that when taken into the body will nourish it. Food is needed to give energy, to build and repair tissue, and to regulate the body, that is, to keep it in good running order.

The food sextet

The foods that the body needs are called *foodstuffs,* or *nutrients.* There are six groups, and the body needs all of them. No one food or foodstuff should be singled out as being the most important. For example, calcium is needed for bones and teeth but it is dependent upon phosphorus and vitamin D for its use in building bones and teeth. (Table 1, pages 8 and 9.)

WEIGHT AS AN INDICATION OF HEALTH

SINCE weight is to a certain extent a barometer of health, before planning the diet one should check his or her weight for the present status of health. Young people need not be disturbed if they do not weigh exactly what the height-weight-age table says they should for their own height and age. Because of differences in bony structure, all boys and girls of a given height and age cannot be expected to weigh the same. Other things being normal, boys and girls should usually be not more than from 10 to 15 per cent below, nor from 15 to 17 per cent above, the weight given for their height.[1]

TABLE 2. RATE OF GROWTH FOR BOYS*
(Short, medium, and tall types)

Types	Age, in years													
	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Average height, in inches													
Short	43	45	47	49	51	53	54	56	58	60	62	64	65	65
Medium	46	48	50	52	54	56	58	60	63	65	67	68	69	69
Tall	49	51	53	55	57	59	61	64	67	70	72	72	73	73
	Average yearly gain in weight, in pounds													
Short	3	4	5	5	5	4	8	9	11	14	13	7	3	..
Medium	4	5	6	6	6	7	9	11	15	11	8	4	3	..
Tall	5	7	7	7	7	8	12	16	11	9	7	3	4	..

*Figures from *Weight-Height-Age Tables*, by Baldwin-Wood.

TABLE 3. RATE OF GROWTH FOR GIRLS*
(Short, medium, and tall types)

Types	Age, in years												
	6	7	8	9	10	11	12	13	14	15	16	17	18
	Average height, in inches												
Short	43	45	47	49	50	52	54	57	59	60	61	61	61
Medium	45	47	50	52	54	56	58	60	62	63	64	64	64
Tall	47	50	53	55	57	59	62	64	66	66	67	67	67
	Average yearly gain in weight, in pounds												
Short	4	4	4	5	6	6	10	13	10	7	2	1	..
Medium	5	5	6	7	8	10	13	10	6	4	3	1	..
Tall	6	8	8	9	11	13	9	8	4	4	1	1	..

*Figures from *Weight-Height-Age Tables*, by Baldwin-Wood.

[1]Refer to *My 4-H Health Record* (New York State Junior Extension Service, New York State College of Home Economics at Ithaca, New York) for height-weight-age table.

Steady normal gains in weight are signs of good health. By using tables 2 or 3 one is able to determine whether he or she is making normal gains.

It is noticeable in the tables that gains are much greater normally for boys between the ages of 12 to 18 years, and for girls between the ages of 12 to 16 years, than at any other time during school years. It is natural, then, that during this period of greatest growth, the need for a large amount of energy and growth-promoting foods is greater than at any other time.

Often mothers have declared, "Why, he eats lots more than his father! He eats like a coal-heaver!" They are quite right, for a growing boy or girl often does, and should, eat in quantity about the amount needed to fill a farm or stone worker, and in nutritive quality this food should be the very best possible selection. Over-eating of any one food, no matter how valuable that food may be, has the inevitable result of crowding out the full variety of foods that the body needs.

MILK AND MILK PRODUCTS

I oft have sung, I sing again
The uses of fresh milk to men.
To hymn its praise I never tire;
My thumb is ever on the lyre.
I learned its use when very young;
It suits my palate and my tongue.

Bob Adams[2]

Milk

Use from a pint to a quart of milk each day.

"BE UP-TO-DATE!" This was the slogan read and adopted by Janet, Marjorie, Paul, and Jerry.

It is modern and up-to-date to prize good health and to work for it. It is modern and up-to-date to choose food for health by following the advice of the scientists who have spent many years studying the food needs of the body and the ways to provide them. It is *old-fashioned* to leave the selection of food to food fads and fancies, to food likes and dislikes, even to custom.

Food value

"We'll all have to drink plenty of milk," said Janet the next time the four sat around the Sunday-evening supper table again. "Of all the foods, it is the one most nearly perfect, you know—it has so many things to recommend it." She held up six fingers. "The whole foods sextet is represented in milk: carbohydrates, fats, proteins, minerals, vitamins, and water."

"Isn't anything lacking in milk?" asked Marjorie.

"Well, it doesn't lack any food elements, but I do have to admit that

[2]From *Rude Rural Rhymes.* Courtesy of the Macmillan Company, New York City.

FIGURE 3. MILK FOR THE AFTERNOON SNACK
Eating between meals should not spoil the appetite for the next meal

cow's milk contains little iron; but what little iron is present is in a form the body can use easily."

"I found another thing about milk when talking to our 4-H Club leader the other day," added Jerry. "You can't always depend on getting your vitamins C and D from it. Vitamin C is rather easily destroyed in milk; even leaving the milk bottle exposed to light for a half hour causes much loss. And unless the cow is specially fed, or the milk is irradiated, the vitamin-D content is low."

"Who cares about that? We can get vitamin C from other foods. And it's easy to digest—that certainly is a good recommendation for milk."

Marjorie looked sober.

"I know all your recommendations are good—milk is a nearly perfect food, it's easy to digest, and it's a cheap food for what you get out of it —but I'm not fond of it; I loathe the idea of having to drink a quart of milk each day."

"You don't have to *drink* it all!" the others cried.

"Get your mother to use it in creamed soups and creamed vegetables," suggested Jerry.

"Make desserts of milk," Janet said. "Custards, bread pudding, and rice pudding—oh, I can think of dozens of ways to use milk besides drinking it."

"The next time some boy asks you to go over to Jake's for a soda after school, choose a chocolate milk shake instead," Paul added. "Or you can eat cheese or drink buttermilk."

The four friends decided to drink at least as much as two glasses of milk daily, and to eat foods containing it. Janet, as usual, found that she enjoyed drinking milk more after she discovered what happens to it in the body. She found that milk is a particularly good food not only because it contains so many valuable building materials but, also, because these are present in forms that the body can use easily.

The high food value of milk is shown comparatively in the following columns, published by the United States Department of Agriculture:

Protein	*Energy*
1 quart of milk gives as much *protein* as do the following:	1 quart of milk gives as much *energy* as do the following:
7 ounces of sirloin steak	11 ounces of sirloin steak
6 ounces of round steak	12 ounces of round steak
4.3 eggs	8.5 eggs
8.5 ounces of fowl	10.7 ounces of fowl

Dr. H. C. Sherman, professor of Chemistry at Columbia University, says, "An adequate amount of milk in the diet has a striking effect of improving physique and general health and increasing mental alertness Other than that, milk enables other foods in the diet to be better used for growth."

Protein

The protein in milk is of superior quality, easily digested, and completely used in the building and repairing of muscles and body tissues.

Sugar

Milk also contains milk sugar, or lactose, a carbohydrate that is easily digested. Although milk sugar is not so sweet as is cane sugar, it is nevertheless an important fuel for the body, helping to furnish energy for work or play.

Fat

The fat in milk, known as *butterfat*, is easily digested. It furnishes energy for growth and activity and the maintenance of body temperature, and it also contains an abundant amount of vitamin A. If skimmilk is used instead of whole milk, one must be sure to get plenty of vitamin A from other sources (table 1, page 8).

Minerals

A quart of milk a day furnishes sufficient calcium to take care of the body needs. (Refer to table 1, calcium, page 8.)

Calcium, needed in larger quantities than most minerals, is much more abundant in milk and cheese than in other common foods. One pint of milk or 2½ ounces of American cheese contain as much calcium as does 9 pounds of lean beef, 16 eggs, 2½ pounds of carrots, 1½ pounds of cauliflower, or 1 cup of molasses. Besides building strong bones and teeth and helping to make muscles contract normally, calcium has another function: it aids in clotting blood. Occasionally, before an operation a physician will build up the patient's reserve of calcium so that he can be sure the blood will clot as quickly as it should.

Phosphorus, another of the essential minerals needed by every cell in the body, is found in milk.

Vitamins

Vitamins A, B, C, D, the pellagra-preventive factor, and riboflavin also are found in milk; and to increase the amount of vitamin D, milk is now often irradiated or the cows are fed irradiated yeast.

With the great number of needed foods present in milk, it is not surprising that it is often referred to as the "most nearly perfect food."

Kinds[3]

Raw

Raw milk is milk as it comes from the cow. "Certified milk" is raw milk that has passed especially rigid inspection by medical authorities and that meets specified sanitary requirements.

[3] *Government regulations.* Because of the importance of milk as a food, and because unclean milk if often a carrier of disease, the commercial dairies in most communities are legally subject to inspection and regulation by the public health authorities. As a result, much of the milk on the market is graded and labeled according to specified standards and tests of purity. Some of it is sold as "raw milk" but more of it is "pasteurized."

Pasteurized

Pasteurized milk is milk that has been heated evenly to a temperature of 145° F. for thirty minutes and then promptly cooled to 50° F. or lower. The vitamin-C content of pasteurized milk may be somewhat less than that of raw milk, but pasteurized milk is a safer food and it keeps longer than does raw milk.

Evaporated and dried

Evaporated milk and dried milk, which come in cans or packages, are made from cow's milk. With water added as directed they have about the same food value as the corresponding amount of fluid milk.

Evaporated milk is just what its name suggests—fluid milk evaporated to about half its original weight; that is, about half the original amount of water contained in it has been evaporated. The evaporated milk is run into cans, which are then sealed and sterilized. On an average, 1 pound of evaporated milk represents 2 pounds of fresh milk. Seventeen ounces of evaporated milk plus enough water to fill a quart measure is approximately equivalent to 1 quart of fresh pasteurized milk.

Condensed milk is evaporated milk with sugar added. One pound represents about 2¼ to 2½ pounds of fresh milk. Condensed milk is used in recipes calling for milk and sugar.

Dried milk is made by several processes, and the product is a dry, cream-colored powder containing practically all the food value of the original milk. Dried whole milk contains the milk fat; dried skimmilk, because it contains practically none of the fat of whole milk, keeps better than does dried whole milk, and it costs less. Exactly 3½ ounces of dried skimmilk plus 3¾ cups of water makes the equivalent of 1 quart of fresh skimmilk, and can be used in the same ways. With the addition of 1½ ounces of butter, the equivalent of one quart of fresh whole milk is obtained. The powder "as is" can be added to fluid mixtures for bread and cake.

Milk products

Milk products include skimmilk, buttermilk, butter, cheese, and cottage cheese.

Skimmilk and buttermilk

Skimmilk and buttermilk have all the food value of milk except that value contained in the fat, and the vitamins A and D, which are dissolved in the fat.

Butter[4]

Butter is milkfat that is separated from cream by churning. (See also *fat in milk*, page 15.) It is a good fat to eat because in addition to the energy furnished, it contains vitamin A in abundance. (See table 1, page 8.)

Margarines

Margarines, often used in place of butter, are made by mixing bland fats other than butter fat in ripened milk. The fat mixture is worked and handled like butter, and the resulting product has a melting point nearly like that of butter. "Nut", or vegetable-oil, margarines are usually made by combining two or more of the following oils: coconut, peanut, cottonseed. "Oleo", or animal-oil, margarines are a mixture of animal fats and oils with vegetable oils, in which the oil from beef predominates. To these butter substitutes some vitamins may or may not be added, but it is a safe practice when margarine is used instead of butter to eat abundantly of other foods containing vitamin A.

Cheese

Cheese contains almost all the food values found in whole milk, but relatively little water. A pound of cheddar or American cheese, which is made from whole milk, contains the protein and fat of a gallon of milk. The milk sugar has been extracted largely in the whey, or changed to lactic acid in the ripening process. A large part of the calcium and phosphorus, as well as vitamin A, is retained. Cheese is a concentrated food, and because it keeps well may be used frequently in meals as a substitute for meat.

Cottage cheese

Cottage cheese, or Schmierkase, is made from skimmilk that has either been soured or clotted with rennin until a curd is formed. This curd is then separated from the liquid, known as *whey*. Cottage cheese contains protein, some calcium, phosphorus, a little fat, carbohydrate, and vitamin A. Some calcium of the milk is lost in the whey in the process of making cheese; therefore, cottage cheese should be supplemented with milk.

[4]To be legally sold as such, butter must be made exclusively from milk or cream, or both, and it must contain not less than 80 per cent by weight of milkfat. It comes on the market as "dairy butter" from farms, or "creamery butter" from commercial creameries or butter factories. Butter graded by government standards, through the service offered by the Bureau of Agricultural Economics of the United States Department of Agriculture, is often sold in consumer packages with a "Certificate of Quality" in each, showing the grade or score and the date when the grading was done.

VEGETABLES AND FRUITS

First are the leaves like spinach and chard
And lettuce, which fill this hard-eating bard
With plenty of iron and vitamins,
With strength and grace and healthful grins.
The leaf crops too will furnish roughage
Required by tender age and tough age.
The snappy snap bean in the diet
Has varied use and all should try it.

. . .

Your time on carrots is well spent,
But catch them young and innocent.
So also beets, best when they're small
And better eaten tops and all,
Since all the leaves beneath their skins,
Are full of iron and vitamins.
Let onions too perfume the air
And plant tomatoes everywhere.

. . .

I urge such foods at every season.
And as the ad says, there's a reason.
We all would be a happier nation
If we were free from constipation.

Bob Adams[5]

Eat daily: one serving of potatoes; two servings of other vegetables; and two servings of fruit. One should be either a raw fruit or a raw vegetable.

WHEN springtime came, Janet and Marjorie and Jerry and Paul worked hard in their gardens, for they were determined to raise enough fruits and vegetables to supply their families with two fruits and two vegetables for each day of the year. That meant raising a good supply to eat during the growing season and enough to store, dry, or can for the winter.[6] The four spent many evenings calculating just how many rows of planting would be needed for each family, using as their basis for planning Cornell Junior Extension Bulletin 46, *4-H Vegetable Growing*.

Food value

The reason the four were so determined to have a plentiful supply of vegetables and fruits was because they found that an abundance of plant foods every day is necessary for the health, happiness, and progress of the human race. Why? Fruits and vegetables and milk and eggs are frequently called "protective" foods because they supply the minerals and vitamins that are necessary; in addition to this, fruits and vegetables provide bulk which aids in the elimination of waste and keeps the muscles of the alimentary canal in good condition. The body is like any other piece of machinery, which may have all its parts in good condition but which

[5]From *Rude Rural Rhymes*. Courtesy of the Macmillan Company, New York City.
[6]For preservation of foods, refer to Cornell Extension Bulletin 261, *Home Canning*.

will not work smoothly without oil and grease and without the elimination of waste.

Janet found from her study that the food value of fruits and vegetables varies greatly for the different kinds, depending somewhat upon the part of the plant eaten. Here is her list of the parts of vegetables used as human food:

Leaves	*Flowers*	*Stems*	*Roots, tubers, or bulbs*	*Seeds*	*Seed containers*
Brussels sprouts	Broccoli	Asparagus	Beets	Beans	Cucumbers
Cabbage	Cauliflower	Broccoli	Carrots	Corn	Egg plant
Chicory		Celery	Kohlrabi	Lentils	Okra
Kale		Chard	Onions	Peas	Olives
Lettuce		Endive	Parsnips		Peppers
Spinach			Potatoes		Pumpkin
Turnip greens			Radishes		Squash
Water cress and other wild edible greens			Rutabagas		Tomatoes
			Sweet potatoes		
			Turnips		

FIGURE 4. A 4-H CLUB GIRL IN HER VEGETABLE GARDEN

A vegetable garden contributes to the family's year-around supply of vegetables

Energy

Because vegetables and fruits vary so greatly, no general statement can be made as to the energy value of all. The fleshy roots, tubers, and bulbs, in which the plant stores food, yield energy because of the carbohydrates they contain: either as starch, as in the white potato; or as sugar, as in the carrot; or both, as in the sweet potato. Seeds are higher in energy value than are roots, tubers, or bulbs. Acid fruits, flowers, stems, and leaves contain little energy value.

Fresh fruits also vary in the amount of energy they can furnish, but many of them correspond in energy value to underground vegetables. Examples of those yielding about the same amount are bananas and potatoes; apples and onions; grapefruit and carrots; and cranberries and beets. Dried fruits, peas, and beans, which yield as much energy as do cereals, pound for pound, are the highest in energy value of all the fruits and vegetables.

Protein

Vegetables and fruits should not be depended upon to supply protein. In a purely vegetable diet, enough protein *can* be eaten to maintain life, but growth is usually better if some animal protein is included. All peas and beans contain some protein, and they are cheap sources; nevertheless most of the protein needed by the body should come from milk, eggs, cheese, meat, and fish.

Minerals

Fruits and vegetables contain calcium, iron, phosphorus, and a number of other minerals in small amounts. Broccoli, kale, mustard, and turnip greens contain more calcium than do most other fruits and vegetables, and these green vegetables are good sources of iron as well. Dried peas and beans also contain iron. Fruits and vegetables also contain copper which must be present if iron is to be used most efficiently in the building of red blood.

Minute quantities of iodine are needed in the diet for the prevention of goiter, and fortunately many soils contain this element, which is then found in the vegetables grown there. Water plants and those grown near the ocean contain more iodine than do others. However, in New York State vegetables cannot be depended upon to furnish iodine. In order to be sure of getting enough iodine, unless cod-liver oil is taken daily, one should eat sea foods frequently.

From experiments it has been found that children require for best growth about one and one-half times as much phosphorus as is needed by a full-grown man. None of the vegetables are as good sources of phos-

phorus as are milk, meat, and eggs, but broccoli, kale, mustard greens, turnip greens, dried peas, and beans contain significant amounts of it. Fruits are poor sources of this mineral.

Vitamins

Fresh fruits and fresh vegetables are one of the best sources of vitamins and for this reason a liberal supply of these foods is needed.

Vitamin A

Vitamin A is found most abundantly in the thin green leaves of lettuce, escarole, dandelion, chard, kale, and spinach. The inner, whiter leaves contain less of vitamin A. Carrots and sweet potatoes also are high in vitamin A, containing nearly as much weight for weight as does butter. The yellow and green vegetables are considered rich sources of vitamin A. Fruits as a group are not so high in vitamin A as are the green and yellow vegetables, but tomatoes, and some yellow fruits such as apricots, yellow peaches, and canteloupe, are good sources.

Vitamin B

Foods containing vitamin B stimulate the appetite and tone the digestive system. Vitamin B is found in many fruits and vegetables in small quantities. The seeds contain more than do the green leaves but, since the amounts are usually small, it is wise to assure one's body of vitamin B by eating whole-grain cereals.

Vitamin C

Fruits and vegetables are the best sources of vitamin C. However, this vitamin is more easily destroyed than are the other known vitamins; therefore, some of the original vitamin-C content of fruits and vegetables may be lost before these foods reach the table. Cooking may destroy some vitamin C, particularly in non-acid vegetables, and, since this vitamin is soluble in water, an additional loss results if the cooking water is discarded. Since vitamin C cannot be stored in the body in large amounts, it is desirable to eat daily some raw fruits or vegetables containing it. Dr. H. C. Sherman says, "It would seem well for us to keep ourselves well saturated with vitamin C by eating liberal amounts of fruits and vegetables." The best ones to eat for large quantities of vitamin C are oranges, lemons, grapefruit (raw or canned), tomatoes (raw or canned), and raw cabbage. Although they contain only fair amounts of vitamin C, raw apples, bananas, carrots, onions, and cooked potatoes may be important sources because they are cheap and plentiful.

Pellagra-preventive factor and riboflavin

Some green vegetables are good sources of the pellagra-preventive factor and riboflavin, but milk, liver, kidney, or other lean meat will be needed to supplement the amount obtained from fruits and vegetables.

The importance of apples

An apple a day is a good slogan for the boys and girls of New York, as this State is well-known for its apple crop, and, with young people to

FIGURE 5. APPLES—ONE OF NEW YORK'S MOST IMPORTANT CROPS
Apples take care of that hungry feeling after school

boost apples, its fame will grow every year. The apple holds a high place in the daily diet for many reasons: it has a pleasing color; it is cool, crisp, and refreshing when raw; and there is a variety for the individual tastes.

Apples can be used in more different ways than can any other fruit. They are good when eaten raw or cooked; as juice, preserves, jellies, canned, dried, or candied; as cider or vinegar. The peelings of apples have high jellying qualities.

Apples are most valuable in the diet because of the fiber they contain, which aids in preventing many cases of simple constipation; and because of their crisp texture, eating raw apples provides exercise for the teeth and gums. The food values in apples are carbohydrates, vitamins, and minerals in small amounts.

In general, the amount of *carbohydrate* in fresh fruits is small as compared to that in cereal foods. The total carbohydrate of the apple is about 15 per cent, including the fiber. As all fresh fruits contain some *minerals*, but not in great quantities, the apple compares favorably with them.

Apples, differing with the variety, have some *vitamin A*. Yellow-fleshed apples are higher in vitamin A than are white-fleshed varieties. The average vitamin-A content of apples is slightly higher than that of orange juice, much higher than that of pears, and a little less than that of bananas.

Little research has been done on the *vitamin-B* content of apples, but what has been done shows that a small amount is present.

Although apples are not so high as oranges, grapefruit, or tomatoes in *vitamin C*, they do contribute an appreciable amount when used in quantities, as is done in this State. Some varieties of apples are richer in vitamin C than are others, and the peel of the apple contains more of this vitamin than does the flesh, hence it is better to eat the whole apple. Since some of the vitamin C may be destroyed in storage, apples held over until spring are not so good a source of this vitamin as are fall apples. The recommended storage temperature for apples is 32° F.

Apples are available throughout the whole year.

The importance of potatoes

In most American households, potatoes are served at least once a day. This is a good practice for the potato is a very important food. Many persons think of potato merely as a starchy food, but it has value for many other reasons and contributes more to our meals in the way of vitamins and minerals than do bread, cereals, and sugar.

The potato may well be compared with an orange. A large orange gives the same amount of energy as does a medium-sized potato. Both contain a

large quantity of water. The orange contains sugar, while the potato contains starch, and each of these substances is a carbohydrate that serves interchangeably as fuel for the body. Both the orange and potato contain calcium, phosphorus, iron, and vitamins A, B, and C. The orange has more calcium than has the potato, but the potato has more phosphorus. Both have the same amount of iron, and are considered fair sources of iron. Neither has much vitamin A, but both contain an appreciable amount of vitamin B, the orange having about three times as much as the potato. The orange is an excellent source of vitamin C; and the potato, although it contains considerably less, is nevertheless a valuable source of vitamin C because of the quantity of potatoes consumed. Freshly-harvested potatoes contain much more vitamin C than do those that have been in storage for a month or longer.

Of recent years, the idea has gained ground that potatoes should be omitted if one desires to reduce weight; on the contrary, it is far better to omit foods which contribute little other than energy value, because of the potato's contribution of minerals and vitamins. A serving of apple pie gives four times as much energy value as an average-sized potato; a serving of cake, three times as much, and a half cup of ice cream about two and a half times as much.

Effect of cooking

The nutritive value of fruits and vegetables may be changed by cooking. When they are cooked in water, parts of the soluble minerals, calcium, iron, phosphorus, and others, and some vitamins, may be dissolved in the cooking water. Therefore, this water should be utilized or the vegetables should be cooked by a method that does not require a large amount of water. For this reason the cooking water and juice from canned vegetables should not be thrown away, for not only are these minerals and vitamins lost, but much flavor is gone. The minerals, vitamins, and flavor may be kept by using the cooking water in sauces, gravies, and soups. With fruit, the cooking water is frequently eaten with the food.

In cooking, some vitamins, particularly vitamin C, may be destroyed. Therefore, it is wise to eat raw at least a part of the daily ration of fruit and vegetables.

Green vegetables should be cooked without a cover on the cooking vessel, to preserve the good green color, and they should be cooked only long enough to become tender, in order to conserve as much as possible of the minerals and vitamins.

FIGURE 6. SUMMER'S WEALTH FOR WINTER'S HEALTH

Many families plan to can, in season, enough fruits and tomatoes for each member of the family to have the needed two servings daily during the winter months

EGGS

Alas! my Child, where is the Pen
That can do Justice to the Hen?
Like Royalty, She goes her way
Laying Foundations every day
Though not for Public Buildings, yet
For Custard, Cake and Omelette.

. . .

No wonder, Child, we prize the Hen
Whose Egg is Mightier than the Pen.

Oliver Herford[1]

Eat an egg every day if possible.

ONE OF the first questions that Janet asked her 4-H Club leader was "Why are eggs so important for our bodies?"

Food value

If you remember that an egg is destined to become a little chicken, and that it therefore must contain all the substances needed to make that chicken's

[1]From *More Animals.* Courtesy of Charles Scribner's Sons, New York City.

FIGURE 7. EGGS FOR ANY MEAL
A 4-H Club girl shows her club mates how to cook eggs

body, from the tip of its beak to the tip of its tail, you will have a pretty good idea of why eggs are important as food. The portion of the egg that you eat contains little calcium and no vitamin C, but the developing chick is able to use some of the calcium from the egg shell, and to make vitamin C. You, too, need vitamin C, and you need calcium, but you can get these foodstuffs from other foods. The building material that you get every time you eat an egg consists of minerals, vitamins, protein, and fat.

Protein[8]

Many foods contain protein, but the quality is better in some foods than in others. Protein of the highest quality is found in eggs, milk, and meat. That is another good reason for eating plenty of eggs.

Minerals

In the yolk of the egg are large amounts of iron and phosphorus; in fact, the egg supplies more iron than does milk, but it contains less calcium.[9]

[8]Refer to table 1 (pages 8 and 9) for further information about protein.
[9]Refer to table 1 (pages 8 and 9) for further information about iron.

You may think it possible to take a chance on getting enough iron by eating a wide variety of foods in your three meals a day, but it is much safer to know which foods are rich in iron and then to check occasionally to make sure that you are getting enough. Nobody wants to be anemic — that is, to lack red blood corpuscles — for such persons are pale and listless, without much zest for living.

If it is not possible to have an egg a day, at least three or four a week should be eaten, to contribute to the needed iron supply.

Vitamins[10]

The egg yolk is rich in vitamins A, B, D, and riboflavin—quite an array to be getting in large quantities from a single food! In summer, although sunshine supplies some vitamin D, it is safer to include in daily meals foods containing this vitamin. In winter in New York State, many days are dark, with little sunshine, so that even eating an egg a day may not supply enough of vitamin D. Although it is not known how much vitamin D is required by older children and adults, it may be advisable in winter to supplement the supply by taking cod-liver oil or by eating other fish oil or oily fish-like salmon, or irradiated foods, such as vitamin-D milk. Fish oils are the richest natural source of this vitamin, and egg yolk and liver come next. Vitamin D is needed to make use of the calcium and phosphorus taken into the body, so that they will function in the building of strong bones and teeth. This vitamin and these minerals are dependent upon each other.

MEATS, POULTRY, FISH

The Cow is too well-known, I fear
To need an introduction here.
If she should vanish from Earth's face
It would be hard to fill her place;
For with the Cow would disappear
So much that everyone holds Dear.
Oh, think of all the Boots and Shoes
Milk Punches, Gladstone Bags, and Stews
All things too Numerous to Count
Of which, my Child, she is the fount!
Let's hope, at least, the Fount may last
Until our Generation's Past!

Oliver Herford[11]

One serving of meat daily is enough.

PAUL and Jerry were the ones who tackled the subject of meat, for they both raise livestock (figure 8) and chickens, and they like to hunt and fish. Since they enjoy eating meat, they were anxious to discover all the good qualities it might have. They found that the main sources of "meat" were beef, veal, mutton, lamb, pork, poultry, game, fish, and shellfish.

[10]See table 1 (pages 8 and 9) for further information about vitamins.
[11]From *More Animals*. Courtesy of Charles Scribner's Sons, New York City.

FIGURE 8. FOUR WINNERS

This 4-H Club boy knows that the daily practice of good food habits is as important for him as for his sheep

Food value

The boys were glad that meat is one of the richest and best sources of protein, and therefore has great value in the daily meals. The protein of meat is similar in value to that of milk and eggs; but meat is not valuable for all the things that milk and eggs are. Milk, for example, is richer in calcium than is meat; eggs are more valuable for vitamins A and D than is meat. However, meats are richer in iron than is milk. Then, too, the food substances in meat differ in value according to the kind—lean meat or fat, muscle meat, or internal organs.

Some boys think they must eat a great deal of meat if they are active in sports, but R. H. Chittenden, a Yale authority on nutrition, has shown that a group of university athletes who were well-trained and in prime physical condition did not need more meat than the person who exercises only moderately. To develop their muscles to the fullest extent, a well-balanced diet

was necessary, including not only meat but foods high in carbohydrates, fats, vitamins, and minerals. It is true that they required more food of all kinds than does an inactive person, but the increase was more in carbohydrates and faf than in protein foods.

In general, the food values in meat are the following:

Protein

The protein in meat is of excellent quality, equal to the protein of milk and eggs for building and repairing tissues.

Minerals

Although lean meat is richer than fat meat in minerals, both contain a moderate amount of phosphorus, a valuable amount of iron, and little calcium. Liver and other glandular organs, such as heart and kidney, are valuable for the iron and copper they contain. Sea food is the most important source of iodine for the diet.

Vitamins

Although meat is not a rich source of vitamins, muscle meats contain vitamin B and the pellagra-preventive factor; lean pork is especially valuable for vitamin B; and liver and kidney are rich in vitamin A and the pellagra-preventive factor. The oils of fish livers are the richest natural source of vitamin D.

Liver

Liver is superior to muscle meat in nutritive quality, because it is much richer in iron and other blood-building materials and in vitamins A and D. The livers from all animals are approximately the same in food value. The price of liver was very low before its great value as a food was known. Calf's liver is the most expensive because many people prefer its flavor.

Questions asked

Here are the answers to some of the questions that puzzled Paul and Jerry:

How much meat should a young person eat daily?

Meat is a "tasty" food, which adds enjoyment to a meal, and a school boy or girl may profitably eat a moderate serving each day. But once a day is enough if milk and eggs are also used, and it is not always necessary to have meat even that often, because other foods, such as cheese, lentils, dried peas, and beans, supply sufficient protein to add to that of milk and eggs. Meat, milk, and eggs at every meal would give more protein than the body needs, and one of the dangers of eating too much meat is that it then takes the place of other needed foods.

Is meat easily digested?

Under normal conditions, meat is easily digested, but the length of time that meat remains in the stomach depends upon the fat content,—the fatter the meat the longer it stays in the stomach. Lean meat stimulates the appetite and the flow of digestive juices.

Is meat broth nourishing?

Meat broth has practically no food value unless noodles, rice, or vegetables are added, but broth is useful as an appetizer at the beginning of a meal.

Amounts of meat to buy

Usually one pound of meat provides three good-sized servings. When little waste and little bone are present, one pound may serve four or five persons.

FOODS FROM GRAINS

Back of the loaf is the snowy flour,
And back of the flour the mill,
And back of the mill is the wheat
and the shower
And the sun and the Father's will.
Maltbie D. Babcock

Eat some whole-grain bread or cereal every day.

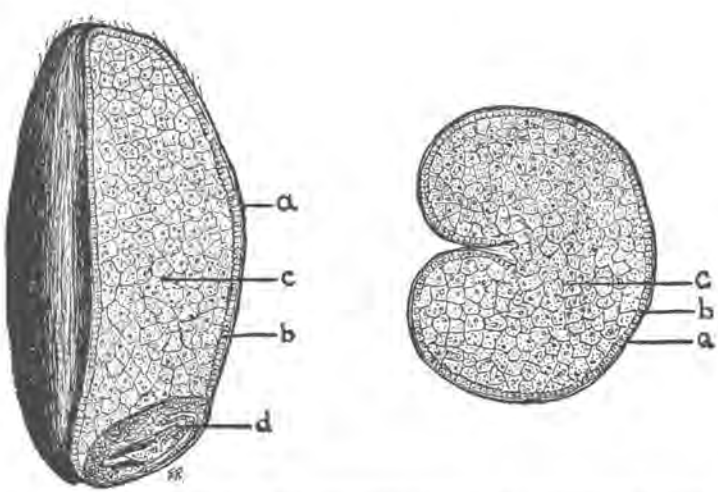

FIGURE 9. GRAIN OF WHEAT, LONGITUDINAL AND TRANSVERSE SECTIONS
a and b, bran layers; c, starch cells of endosperm; d, germ

MARJORIE was to find about foods from grains, and she expected to be bored by such dull, taken-for-granted foods as cereals and breads. But instead she found herself fascinated by their great variety and the high place they hold among important foods. All over the world human beings eat food from some sort of grain: rice is the principal food for about half of the earth's inhabitants; wheat is the grain eaten in largest quantity in this country; and in other countries, rye, barley, and oats are most relished. Americans eat a wide variety of breads and cereals made from wheat, oats, corn, barley, and buckwheat, and they include among their foods from grains, breakfast cereals, breads, cakes, macaroni, spaghetti, vermicelli, and noodles.

The use of grains for food is not new in the history of mankind. Seeds of grain have been found in early mummy cases as food for the dead, and the white men found the American Indian growing corn and making a whole-grain cornmeal by crushing the seeds by hand between two stones. Wheat flour also was first made by this crude method, and the result was a whole-grain flour. Modern men invented the flour mill, and they were delighted with the white or creamy color of the flour obtained by removing certain parts of the grain. It was found that such a milled product kept better than ground whole grain, so today both the so-called "refined products" and whole-grain products are used. The parts removed by milling to make refined products are the bran and the germ, leaving nothing but the middle starchy portion of the grain. In figure 9 are shown the three distinct parts of a seed from grasses, which are called *grain*. They are:

1. The bran, made up of several coats, all of which contain minerals. The layer next to the inner grain is especially rich in iron and phosphorus, but the greater part of these coats is made up of woody fiber called *cellulose*.

2. The endosperm, or inner portion, is the starchy center of the grain. This contains in addition to starch certain forms of protein, but little mineral and vitamins.

3. The germ, or embryo, is the part of the grain that sprouts and grows when planted. This is a good source of vitamin B. It also contains fat, mineral, some protein, and a little starch. The fat of the germ makes whole-grain products spoil more readily than refined products, because the fat tends to become rancid, producing an objectionable flavor and odor.

All grains are similar in structure and food value, and their chief contributions to daily meals are the following:

1. They are a source of energy, and probably are one of the most important of foods in this regard.
2. They are economical and easy to obtain.
3. They are easily digested.
4. Their flavor is mild and pleasing so that one does not tire of eating them.
5. They contain some minerals and vitamins.

6. They contain some valuable protein, but since it is not so complete a protein as that found in meat, milk, and eggs, it should be supplemented by these foods.

Whole-grain foods

Whole-grain foods are more useful generally than are refined ones, because they contain the minerals, vitamins, and bulk lacking in the refined

FIGURE 10. WHOLE-GRAIN QUICK BREAD FOR VARIETY
Nuts, raisins, and whole-wheat flour make this a delicious bread

products. One need not worry about eating some refined cereal, however, if the meals include generous amounts of milk, fruits, vegetables and eggs.

Minerals

Although whole grains are not entirely digested because of the cellulose they contain, nevertheless more mineral substance is obtained for the body from whole grains than from refined products. About three-fourths of the minerals of the original grain are lost in milling.

The minerals found in whole grains are iron and phosphorus. The iron of wheat and oatmeal is particularly useful in the building of red blood.

Vitamins

Whole-grain foods contain a valuable amount of vitamin B, which is needed for growth, good health, normal appetite, and good digestion. Even though this vitamin is found in small amounts in many ordinary foods, one will be more sure of getting enough of it if some whole-grain food is eaten daily. A good rule to follow is to have at least half the grain foods one eats in the form of whole-grain bread or cereal.

Bulk

Refined cereals and breads do not furnish roughage, because the cellulose coats of the grains have been removed. Most persons find the bulk that whole grains provide desirable for the prevention of constipation. Others find the cellulose coatings, especially if eaten in such concentrated form as bran, too harsh for the alimentary tract.

Most dark breakfast cereals are made from the whole grain. The label on cereal boxes and loaves of bread usually states whether the product is whole-grain or refined.

Wheat

It is difficult to understand why some persons prefer one type of grain and another a different type. Americans use more wheat than any other grain, because they like the taste and because wheat furnishes a flour that makes a light loaf of bread. Rye is the only other grain to furnish such a flour. Wheat contains two proteins that develop into gluten when they are mixed with water. Gluten gives the elastic quality to dough, enabling it to retain gas bubbles produced by yeast or baking powder or by beating air into the dough.

The two kinds of common wheat are: (1) soft or winter wheat, which is sown in the fall and which contains more starch and less gluten than does spring wheat; and (2) hard or spring wheat, which is sown in the spring, and which contains less starch and more gluten than does winter wheat. Pastry flour is made from winter wheat and is best for cakes, quick breads, and pastry. The flour made from spring wheat is best for bread-making. All-purpose or family flour is a blend of the two kinds of wheat, which may be used both for cake making and bread making.

Differences are often noted between graham flour and whole-wheat flour, but the United States Food and Drug Administration says,

"Whole-wheat flour, entire-wheat flour, graham flour, is the product made by grinding wheat, and contains, in their natural proportions, all the constituents of the cleaned grain."

WATER

Hiking is a pleasant thing
And so are motor trips,
And travel in a bark canoe,
Or on big modern ships!
But oh, what fiendish torture,
Most any trip can bring
Unless some water's handy
In pipe or can or spring!
And yet one cannot guzzle
Or sip from *any* source,—
A crystal glass may carry germs
Enough to kill a horse!

Mary G. Phillips

Drink a glass of water several times a day.

IN GENERAL when people are thirsty, they take a drink of water without thinking much about such a common occurrence. But when settlers are attempting to establish homes in the wilderness, the first thing they must consider is whether fresh running water is near at hand; in fact, the history of civilization follows the water courses of the world, for all cities have been built on or near some source of drinking water. In the minds of shipwrecked sailors, the water supply is always uppermost, for they know that they can live many days without food, but their bodies will cry out in a short time for the water that is essential to life. The need for water comes next to the need for oxygen.

Water is needed in large quantities because it is the largest constituent of every soft tissue, and about two-thirds of an adult body is water, enclosed in the billions of tiny cells or units that make it up. No one knows when the first cell was formed, or how it came upon this earth, but every plant and every animal is made up of cells. Brain cells contain a particularly large amount of water; liver, kidney, and muscle cells hold as much water in proportion to their weight as does the potato; and even the dry cells called *bone* are more than one-third water.

To do their work well, every cell must be constantly bathed in fluid; also, food taken into the body must be dissolved in the process of digestion; the digested food must be carried in a fluid (blood) to every part of the body; the waste products of the cells must be flushed away; and the surface of the lungs must be kept moist in order for them to perform their work. In all of these processes, great quantities of water are needed.

Since water is being constantly lost from the body, the supply needs constant renewal, and this renewal comes from several sources. The three important sources of body water are:

1. Water drunk as a beverage alone or in combination with other materials, as milk, soups, cocoa, and others.

2. Water taken in with solid foods, especially fruits and vegetables. Even the dryest cracker contains some water, and foods as solid-looking as potato and carrot contain large quantities. The water content of some of the common foods is the following: walnuts, 3 per cent; butter, 11 per cent; American cheese, 32 per cent; bread, 35 per cent; beef round, medium fat, 66 per cent; eggs, 74 per cent; potatoes, 78 per cent; milk, 87 per cent; apples, 84 per cent; carrots, 88 per cent; lettuce, 95 per cent.

FIGURE 11. STARTING THE DAY RIGHT
Drinking a glass of water upon arising is an aid to elimination

3. Water actually formed inside the body as a result of changes that take place in the fuel foods,—fat, carbohydrates, and proteins.

Some body water is being continually lost by unnoticed evaporation from the skin as well as by perspiration; in the breath from the lungs; by elimination from the kidneys as urine; and by elimination from the alimentary canal in the feces. Normally about four or five pints of water are eliminated daily.

It is surprising that some food substances, in order to be completely used up by the body, require more water than they themselves contain. This is true even of milk, which contains 87 per cent of water. Since this is the case, and since the daily elimination of water is so great, it is evident that large quantities of water must be taken in each day.

When Janet, Marjorie, and Paul were faced with all these facts about water, which Jerry had gathered, they were impressed with its importance, and they decided to watch their daily supply, and be sure that they drank from six to eight glasses a day, either as water or in some other beverage. They were careful not to use the water drunk at meals to wash down food, for they knew the value of plenty of chewing. Their practice—six to eight glasses of fluid a day—is a good one to follow. More may be needed in warm weather, when so much water is given off in perspiration. When one is very hot, however, he should be careful not to drink beverages that are ice-cold.

SWEETS

"Sweets to the sweet," they say, my pet,
But that is bad advice!
For if you cake and candy take
And of desserts eat twice,
How long, my sweet, will you stay sweet?
Think once—and twice—and thrice!
Your lissomeness and lovely bloom
Will go, right in a trice.
So for desserts, you stick to fruits
And let their sweet suffice!

Mary G. Phillips

Eat sweets at the end of meals; and in cooking, use the least amount that will produce a pleasing flavor.

BECAUSE Paul is extremely fond of fudge, the girls insisted that he be the one to find information about the place of sweets in the diet. At one of their Sunday-evening get-togethers, he said he was ready—he had "found out plenty!"

"Well, tell us then," said Jerry. "Let us know the worst—can we give sugar any place in our meals?"

"Sure we can," Paul replied. "The thing to do is to know the place of sugars and then to keep them in their place."

FIGURE 12. A POPCORN PARTY
4-H Club boys and girls make popcorn balls

"I'd hate to do without sugar entirely in my meals," said Marjorie, finishing a cup custard with relish. "I'm fond of desserts."

"*There's* the place for sugars—at the end of a meal," Paul said. "Then you don't hurt your appetite for the other needed foods. Now let me tell you a few things for your good about sweets. Marjorie, you'll have to 'lay off' on the candy and chocolate cake, unless you're willing to go in more heavily for sports. For sugar is a sort of one-sided food. It gives nothing to the body but quick energy for activity. Between halves of a hard football game athletes are often given a couple of lumps of sugar, and they work it right off in the energy they put into the game. But if it isn't all used up in activity, then it gets stored as fat; and you, Marjorie, are decidedly on the plump side, so you'd better take *that* lesson to heart."

Marjorie sighed.

"I know," she said. "But there *are* sweets that have something to recommend them besides the carbohydrates found in sugar, aren't there, Paul?"

"Yes, if you stick to fruits as your sweets, you get some vitamins and minerals besides, so that's the best way to satisfy your sweet tooth."

To explain what he meant, Paul showed the others the table given below. In order to make a fair comparison, he had listed four sweets in amounts that furnish the same energy and he pointed out how much these differ in furnishing a proportion of the whole day's necessary calcium, phosphorus, iron, and vitamins A and B.

TABLE 4. A DAY'S REQUIREMENT OF FOOD SUBSTANCES IN FOUR SWEETS WITH THE SAME ENERGY VALUE

Amount of sweets furnishing the same *energy* value	Proportion of the whole day's requirement of certain necessary food substances				
	Calcium	Phosphorus	Iron	Vitamin A	Vitamin B
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*
4 lumps of sugar	0	0	0	0	0
1½ tablespoons of molasses	9.0	1.0	26.0	0	0
1 tablespoon of honey	0.24	0.44	2.0	0	0
4 dates	2.0	2.0	11.0	1.5	6.0

The best sources of sugar

Probably the most desirable of all materials with which to satisfy a desire for sweet-tasting foods are fruit juices and fresh, dried, or canned fruits. Some fruits in the fresh state contain from 10 to 15 per cent of sugar, and in the dried state from 50 to 75 per cent. In addition to the carbohydrates, vitamins A and B are present; likewise the minerals, calcium, phosphorus, and iron. Vitamin C is also present in fresh fruit. Milk too is an excellent source of sugar.

Whenever the substitution of natural sugars or sirups—such as honey, molasses, and maple sirup—produce a satisfactory product of pleasing flavor, their use for sweetening is desirable because of the minerals they contain.

Effect of sugar

The objection to too free use of sugar, on the ground that it serves only as fuel and may replace to a great extent other food materials required for best growth and well-being, applies to refined sugars, commercial glucose, and most candies.

Sugar is an energy food. The more refined it is, the more carbohydrate is present. All of the energy food not used by the body is stored as fat; hence overindulgence in sugar may cause one to become overweight. Good complexions and teeth may be ruined by too much sugar because other needed foods have been crowded out as the appetite is dulled with sweets. Also, some evidence indicates that eating too much concentrated sugar, such as candy, may produce a medium in mouths favorable to the growth of bacteria which

cause cavities in the teeth. Sugar, when taken alone on an empty stomach, is directly irritating to the lining of the stomach, from which it takes water, just as a piece of candy held in the cheek removes water and causes the lining of the mouth to pucker. The best time to eat sweet foods is at the end of a meal, when the sweet is diluted by the food already eaten and thus is not so concentrated. Sweet chocolate not only dulls the appetite, but, because of fat present, retards digestion; also chocolate, like tea and coffee, contains a stimulant.

Where sugars come from

Sugars as they occur in nature are manufactured by green plants for their own use as food and are, therefore, often found in large quantities in plant juices or sap and in fruits. The sweet liquid, known as *nectar,* in the bottoms of flower cups has another purpose, that of serving as a lure for insects, just as the bright color of flowers does.

Natural sugars

Milk sugar

Milk sugar encourages the growth of *Bacillus acidophilus* in the lower intestine, and the presence of this bacillus there often assists in correcting or preventing some forms of constipation. (See *Sugar in milk,* page 15.)

Fruit sugar

Fruit sugar (fructose or levulose) is found in fruits and in honey, and is the sweetest sugar of all.

Honey

Honey is the oldest known sweet. Honey-bees collect nectar in large quantities and carry it back to the hive where they ripen and concentrate it until it becomes the clear viscous sweet called *honey.*

The differences in flavor and color in honeys are due to the differences in the flowers from which the nectar is gathered.

Maltose

Maltose is a sugar found in sprouting or malted grains. It is less sweet than the other sugars.

Refined sugars

Cane sugar

Cane sugar is from the sugar cane, which is the oldest and best known of the sugar-producing plants.

Beet sugar

Beet sugar is from the sugar beet, and has been used only since the middle of the nineteenth century. When refined, one cannot tell the difference between beet sugar and cane sugar.

Brown sugar

Brown sugar is an intermediary product produced in the refining of cane sugar. Some mineral is present as well as carbohydrate.

Sirups

Sugar cane

Molasses is the mother liquor from which cane sugar has been crystallized. Calcium and iron are present in it as well as carbohydrate. The light New Orleans molasses contains less mineral matter than do the dark Puerto Rico molasses.

Cane sirup is the concentrated sap of sugar cane.

Sorghum cane

Sorghum sirup (sorgo sirup or sorghum) is made by boiling down the juice of the sorghum cane.

Maple trees

Maple sirup is made by boiling down the sap from the sugar maple tree. It contains some calcium, phosphorus, and iron.

Corn

Corn sirup (not mixed) is the concentrated product obtained from corn. Three types are on the market: white corn sirup, dark corn sirup, and flavored corn sirup.

Cautions

Before eating sweets one should ask:

What else besides sugar does this sweet contain? (The best ones are those that contain little sugar and more building and regulating foods, such as apples, raisins, dates, oranges, figs, prunes, and others.)

Does this sweet increase appetite or does it retard my appetite for other needed foods? (Tart fruits and fruit juices increase the appetite.)

Am I eating this sweet at the right time or am I eating it when it will spoil my appetite for needed foods? (Eating sweets at the end of the meal means that one takes in other needed foods before spoiling the appetite.)

MEAL PLANNING, TABLE SETTING, SERVICE, AND MANNERS

What's a fine person, or a beauteous face,
Unless deportment gives them decent grace,
Bless'd with all other requisites to please,
Some want the striking elegance of ease;
The curious eye their awkward movement tires:
They seem like puppets led about by wires.
Charles Churchill

MARJORIE and Janet often planned Sunday-night suppers to which they invited Jerry and Paul so that the four of them could discuss their progress with their "plan for better health." The girls wanted to have good meals and to make the table as well as the food attractive when they entertained, so they decided to find how this could be done. Since you too probably want to entertain your friends now and then, what Marjorie and Janet learned about meal planning, table setting, table service, and table manners is given in the following pages.

MEAL PLANNING

Remember the "daily food guide" in planning the three meals at one time!

PLANNING at one time the three meals for one day is the best and easiest way of checking to see that all daily food requirements are included. Instead of attempting to balance *each meal,* it is simpler and more satisfactory to balance *each day's meals* as a unit. The following guide helps in planning meals for normal healthy persons:

Daily food guide

Milk: From 2 to 4 cups daily as a beverage or in foods cooked with milk

Vegetables: 3 servings as:
Potatoes—1 serving
Other vegetables—2 servings.
Use green or yellow vegetables daily if possible; at least three or four times a week

Fruits: 2 large servings
Include orange, grapefruit, or raw or canned tomatoes at least three or four times a week. Eat some raw fruit or vegetable each day

Eggs[12]: 1 each day if possible—at least 3 or 4 a week

Meat, fish, cheese, or dried beans
1 serving

Whole-grain bread or cereal
Use at least as much whole grain as refined cereal products

Butter: Three times a day

Water: 6 or more glasses

Enough starchy food, fats, and sweets to maintain satisfactory body weight and to supply necessary energy

Menus for a winter day

Breakfast
Stewed prunes and apricots
Whole-wheat cereal with milk
Toast and butter
Milk for children
Coffee for adults

Lunch carried to school
Raw carrot and cabbage sandwich on whole-wheat bread
Egg and bacon sandwich on white bread
Apple, and oatmeal cookie
Milk or cocoa

Dinner
Tomato juice (canned)
Meat loaf
Baked potato
Buttered greens
Celery
Bread and butter
Berry shortcake (made of canned berries)
Milk

[12]For one who does not get plenty of sunshine along with the eggs, it may be desirable to include an additional source of vitamin D in the diet. (Refer to page 10 and to table 1, pages 8 and 9.)

Meal planning involves more than merely including the foods listed in the daily food guide; the following should be considered:

The age of the individuals to be fed.

The daily food guide should be used for all the family; but, if any members are very young or old, the amounts served and the method of preparation of some foods may be different.

The activity of the members of the family.

Very active persons need more food than do those who exercise little. Active persons enjoy food that "stays by," such as meat and potatoes or food with fat.

Money available for food.

The amount of canned and stored food on hand.

A plentiful supply in the cellar helps to simplify meal planning.

The season of the year.

Out-of-season foods are not economical.

The time available for preparing meals.

More than one complicated dish in a meal is unnecessary and time-consuming.

The equipment available.

The stove space, oven space, cooking utensils, and serving dishes available should be considered.

Dislikes of individuals in the family.

In many homes consideration is given to the likes and dislikes of individuals in the family. But Janet and Marjorie learned that many of these dislikes can be overcome if the food is always well prepared, served differently from time to time, and served without comment.

Making meals attractive

Even though the three meals of the day may include all the foods listed in the daily food guide, and be suitable in all the ways mentioned, they still may be unattractive. Unless food looks good, it may not be enjoyed. Some things to keep in mind to make meals attractive are:

Hot foods should be served *hot* and cold foods *cold*.

Variety in the meals from day to day makes them more appetizing.

It is well not to serve the same menu two days in succession. Sometimes it is necessary to change only the method of preparation for variety.

Contrast in texture makes eating more enjoyable.

It is well not to serve all soft foods in one meal. A good rule is to have a food which requires chewing, such as a crusty or crisp bread, and a raw fruit or raw vegetable in contrast with soft foods.

Contrast in flavor is pleasing.

A meal with all bland foods, such as potatoes, creamed carrots, cornstarch pudding and milk, is monotonous. Likewise, two creamed dishes in the same meal are not good. A more appetizing meal includes some tart food.

Harmonious color combinations make meals more cheerful in appearance.

Although often hard to carry out at every meal, a particularly uninteresting-looking meal can be made attractive with a bowl of flowers, a gay colored cloth, or bright dishes. The pale color of pork, mashed potatoes, and onions on a plate can be relieved by a piece of green parsley or lettuce or bright colors on the table. It is well to include at least one food differing in color from the others.

Three meals a day

Breakfast

Breakfast is exceedingly important to the health of the school boy or girl. This first meal of the day is appropriately called "break-the-fast," because the period between the evening meal and breakfast is longer than that between the other two meals. To go without adequate food from the evening meal at night until the next noon is a strain on the body and is sure to tell sooner or later on the young person who makes a regular habit of doing so.

The habit that many young people have of going without breakfast is not always due to feeling rushed in the morning or to a desire to be thin. The young person may have a lack of appetite owing to a lack of vitamin B. (Refer to table 1, page 9.) Plenty of fresh air, sunshine, and sleep also help to create an appetite. A good breakfast keeps one from feeling tired and empty before the morning is half over.

Breakfast may be light, medium, or heavy. A school boy or girl needs at least a light breakfast, many need a medium breakfast, and the boy in his teens who does chores before school or who plays baseball or football or exercises vigorously in other ways may want a heavy breakfast.

Light	*Medium*	*Heavy*
Fruit	Fruit	Fruit
Bread or cereal	Cereal	Cereal
Milk or other beverage	Eggs or bacon	Eggs or bacon
	Bread	Another hot dish
	Milk or other beverage	Bread
		Milk or other beverage

Fruit is an important part of breakfast. It serves as an appetizer and laxative, and adds minerals and vitamins.

Hot cooked *cereals* are cheaper than prepared cereals, but both kinds give energy; and if whole-grain cereals are used, part of the needed minerals and vitamins are also supplied.

If one likes *eggs* for breakfast, the egg-a-day recommendation is easily taken care of early in the day.

The *bread* for breakfast is generally toast. If the cereal for this meal is refined, then it is advisable to have whole-grain bread of some kind. Muffins, waffles, popovers, and griddle cakes are often used in place of toast.

The *beverage* for breakfast should be milk or one made with milk, such as cocoa.

Lunch or supper

More originality can be shown for lunch or supper than for any other meal, because there is an endless variety of things that can be served to make this the meal that balances the day's food. So any foods than one may have forgotten to include for breakfast or dinner may be put into the menu for this third meal of the day.

After consideration has been given to the essential foods, adjustments may have to be made for this meal if the young people of the family have to eat lunch at school.

At home

The pattern for lunch or supper at home may be:

Main dish
Vegetable or fruit
Bread and butter
Dessert
Milk beverage

The *main dish* for lunch or supper means the heavy part of the meal; it may be a combination of meat, eggs, cheese, or fish and vegetables; a cream soup or chowder; or, if it is warm weather, it may be a cheese, egg, meat, or fish salad, or a vegetable and meat, cheese or egg sandwich.

The *vegetable* for lunch may be included in the main dish, the soup, the sandwich, the salad, or served as vegetable strips or as a cooked vegetable. It is often well to have a raw vegetable to give crispness.

If a *fruit* is selected for lunch, it may be served as an appetizer if tart rather than sweet, such as a fruit drink or fruit cup; as a fruit plate or fruit salad; or as dessert, plain, with a cookie. Tomato juice can often take the place of fruit juice as an appetizer.

The *dessert* for lunch or supper may be heavier than the dinner dessert, because the meal is usually lighter.

The *milk beverage* is important, to insure the milk requirement for the day.

At school

With the packing of one's own lunch or the buying of some food at school, begins the responsibility of selecting foods for one meal. This is an excellent opportunity to learn about food selection, for here one can choose the best possible lunch for building a healthy body and for his own well-being. Something hot for this meal is desirable because hot food is more satisfying than cold, especially in cold weather, and it does wonders in helping one through the hours of afternoon school work.

A packed lunch

Pattern for a packed lunch

Hearty sandwich[13] (egg, cheese, or meat, depending upon whether meat will be included in the dinner at home)
Crisp or succulent food (sandwich filling, raw vegetable, or salad)
Milk, milk soup, milk beverage, or milk pudding
Sweet (sandwich, simple cake, or cookie)
Fruit (raw, cooked, or fruit juice)

A packed lunch should be appetizing, whether it is packed in a lunch box, cardboard box, or paper bag. A box is more satisfactory than a bag because containers of milk, desserts, or salads can be more easily carried. Lunch containers are kept without odor and mustiness if washed, rinsed, and aired daily. The container helps to protect the flavor and shape of the lunch. Some containers used for carrying liquids, such as milk, are half-pint bottles with corks, fruit jars with a screw top, or thermos bottles. Desserts may be carried in jelly glasses with tops, screw-top jars, or covered paper cartons.

In packing a lunch in a container, the firm food or bottles are best placed in the bottom of the container. Everything should be compact to prevent foods from sliding back and forth. Sandwiches and raw vegetables will not dry out if wrapped in waxed paper.

Some accessories that help to make lunch packing a pleasure are waxed paper, paper napkins, paper cups, paper plates, rubber bands, paper spoons and forks. A vacuum bottle is also useful.

Lunch bought at school

When a *plate lunch* may be bought at school, there is little or no choice, but this is not important since the lunches have probably been planned from a viewpoint of nutrition and tastiness. Milk, vegetables, and fruits, as well as other foods, prepared simply and in easily digestible forms are usually served.

A choice for lunch. Learn to eat all foods and never omit the protective

[13]Refer to recipes for *sandwich fillings* on page 82.

foods—milk, eggs, vegetables, and fruits. Cost is one thing that most boys and girls must consider in buying a lunch. It takes careful planning both from the standpoint of food values and money to select a good lunch, but the first responsibility is to see that milk and a substantial food are eaten before a sweet dessert is chosen. Whenever it is possible to select from a variety, one must be alert to food values, and nothing helps more in selecting a lunch in a cafeteria than to know the fundamental rules of meal planning. It is a poor tray that has on it at the end of the line, both chocolate milk and chocolate pudding.

The desirability of something hot at noon to supplement the lunch brought from home is met in some schools by having a hot dish prepared by an outsider and brought in, or one prepared by the students. If the students prepare the hot dish, good management is necessary in order not to take too much time from school work. If simple nutritious foods are chosen, such as soups, creamed dishes, milk drinks, and egg dishes and, if the time is well planned, this procedure will not interfere too much with school work or the orderliness of the school room.

Some simple equipment and utensils are necessary for such an undertaking and may be gathered at little expense. The following list includes all that are necessary:[14]

A cupboard, preferably with a door or close-fitting curtain
A kerosene stove, unless the heating stove may be used
A large double-boiler. (This may be made of two ordinary kettles, one of which fits into the other.)
1 medium-sized sauce pan
1 coarse strainer
1 measuring cup
1 knife
1 large stirring spoon
1 ladle
1 tablespoon
1 teaspoon
1 cup for each person (the regular drinking cup may be used)
1 soup spoon and 1 bowl for each person
A small portable oven will make possible a great variety of hot dishes

If dishes other than soups and milk drinks are to be made, a plate for each person and a fork and an extra spoon for each are needed. A few extra dishes make it possible to have guests now and then on special occasions.

The following suggestions are helpful in making a hot dish at school. Plan one week for the next week.

[14]Taken from *School Lunch and Breakfast for the 4-H Club Girl*, by Nancy McNeal Roman. Cornell Junior Extension Bulletin 25. (Available in libraries only.)

Decide exactly what hot dish is to be served each day of the week. See that each student has a list of the week's menu so that his lunch brought from home will make a good supplement.

Make a list of the supplies needed for each day (refer to recipes).

Decide who shall be responsible for supplying these foods each day, or have a minimum charge for each dish.

Make a schedule of the students who will be responsible for preparing and serving the food each day.

Make a schedule of the persons who are to do the cleaning up. (Usually the ones who prepare the food prefer to do the cleaning on the same day. When they do this, they can clean up a great deal as they go along, thus saving time and keeping better order.)

Discuss the best way of managing for each dish, that is, at what time the work can best be fitted in with the regular school program. (Details of this can be left to those in charge on each particular day.)

Figure the amount of time it will take to do each part of the work and start soon enough to have the dish ready at the time it should be served.

How the hot lunch can be managed in a school that has limited time, space, and water supply for cooking is shown in figure 13. Each boy and girl brings his jar of hot food from home and re-heats it in the hot-water bath in time for lunch.

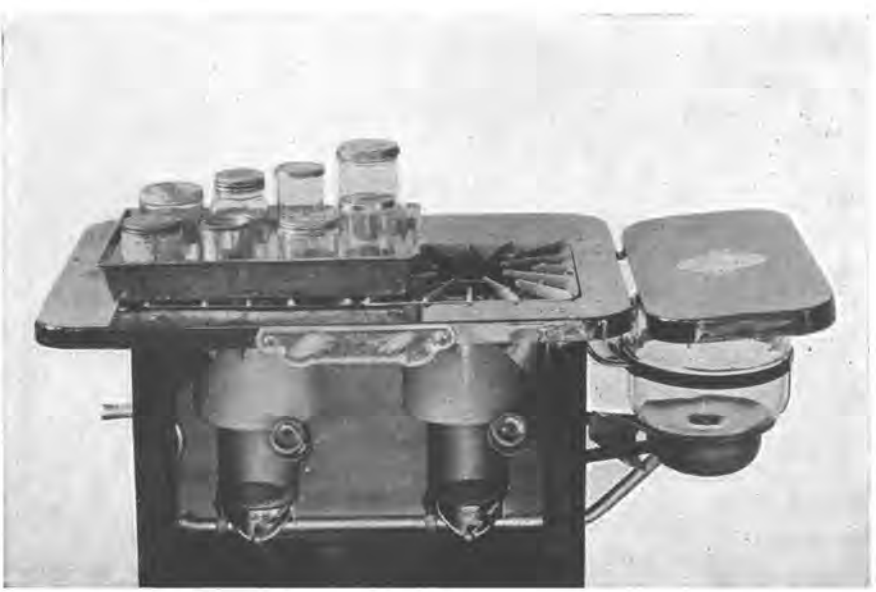

FIGURE 13. THE SIMPLEST HOT-LUNCH EQUIPMENT

(A description of the needed equipment is given on page 46)

The pan needs a rack or false bottom to prevent the glass jars from breaking. The deeper the pan, the more quickly the jars will heat. The jars of food are put in the pan to be heated about one hour before eating.

Whatever the lunch, it should be nutritious and should take care of about one-third of the daily food requirements.

Dinner

Dinner may be served at noon or night, depending upon the habits of the family. If the boys and girls of the family have to eat lunch at school, it is advisable to serve the heartiest meal at the end of the day. Dinner menus may be simple, with one or two courses, or they may be made more elaborate with more courses. A few dinner patterns are given, but many other combinations are possible:

1

Meat or meat substitute (cheese, dried beans, and the like)
Potatoes
Cooked vegetable
Breadstuff
Salad or dessert
Beverage

2

Meat or meat substitute
Potatoes
Cooked vegetable
Salad or raw vegetables
Breadstuff
Dessert
Beverage

3

Clear soup or fruit cocktail or tomato juice
Meat or meat substitute
Potatoes
Cooked vegetable
Salad or relishes
Breadstuff
Dessert
Beverage

One serving of *meat* a day is sufficient. (Refer to page 29.)

It is well to serve *potatoes* at least once a day. Sometimes the meat, potatoes, and vegetable may be combined, as in a meat pie or beef stew with vegetables.

Macaroni, rice, or hominy are often served in place of potatoes, but they should not be substituted every day because they have less mineral and vitamin content than do potatoes. Their chief contribution is energy.

The other *cooked vegetable* may well be a green or yellow one, if neither has been served at one of the other meals of the day.

Unless one *raw vegetable* has already been served during the day, it should be included in the dinner. It may appear in the form of a salad or celery or as raw vegetable strips, such as carrot, green pepper, cucumber, and turnip. The dinner salad gives an attractive and colorful touch to the rest of the meal; it should be lighter than a salad served for lunch. If desired, a third cooked vegetable may be served in place of a salad.

The *breadstuff* may be bread or hot rolls, and unless whole grain has already been served in some form, this should preferably be a whole-grain breadstuff.

If *dessert* is served, it should be suited to the rest of the meal. A heavy dinner should be finished with a light dessert, such as fruit, gelatin, simple frozen desserts, or simple puddings. A light meal may have a heavier dessert, such as pastry and rich puddings. But a dessert is not always essential, particularly if an appetizing salad is served.

The *beverage* at dinner should be milk for the club boy and girl and young children. Tea and coffee are unnecessary stimulants which give no food value.

In dinner pattern number 3, soup, fruit cocktail, or tomato juice is the first course. These are called *appetizers*. The fruit cocktail may be tart fruit juice served hot or cold, or a mixture of cut fruit. Tomato juice is a great favorite as an appetizer.

The dinner soup should be an unthickened soup served very hot. *After the meals are planned,* several things should be done:

List the food supplies needed in addition to the food on hand.

List the equipment and dishes and decorations needed.

Make a plan of work. List the work that you can do the day before.

Plan the work to be done the day the meals are served.

List the work that must be done at the last minute.

Plan the way the meal is to be served and the way table decorations are to be used.

TABLE SETTING

Linen

A BREAKFAST, lunch, or supper table may be set with a lunch cloth, runners, or doilies. Material for these may range all the way from fine linen to oilcloth, depending upon the occasion and the necessity to economize on the cost of material and the labor of laundering. The simplest material when clean will be appropriate and attractive if it suits the kind of dishes used. Rough homespun materials seem to fit pottery dishes, and finer weaves look well with a lighter type of china.

When a lunch cloth is used, it should cover the table but need not necessarily hang over the edge.

Doilies are usually rectangular in shape and each one is large enough to hold the silver, glassware, and dishes for one person.

For dinner, a tablecloth is often preferred, with a silence cloth or pad under it. The silence cloth deadens noise from the dishes and silver, protects the table, and allows the tablecloth to lie more smoothly on the table. The center fold of the tablecloth is placed lengthwise in the center of the table, and a cloth looks better if a length of about 10 inches hangs over the edges of the table. No doilies are needed when a tablecloth is used.

Luncheon and supper napkins may be folded to form a square or a rectangle, but dinner napkins are usually folded square. The napkin is most convenient to take hold of and open if placed on the table at the left of the fork, with one open border parallel to the edge of the table and the other open border parallel to the fork. This brings the open corner of the napkin near the fork.

The cover

The articles to be used at the table by one person are known as a *cover,* which includes the silver, glassware, china, and linen. The cover should be placed so that the table looks well spaced, with an allowance of from 20 to 24 inches in width and 15 inches in depth for each person.

Arrangement

Silver

The silver is placed so that the handles are about 1 inch from the edge of the table. The knife is placed at the right with the cutting edge turned toward the plate. The spoons, bowls up, are placed at the right of the knife in the order of their use, the spoon to be used first being put farthest to the right. Forks are placed at the left of the plates, tines up. If two forks are needed at the meal, the one to be used first is placed farthest to the left.

Some meals do not require a knife. Forks and spoons may then be placed at the right, the fork being placed nearest the plate. One may still place the forks at the left if desired.

If a bread and butter knife is used, it usually is placed on the bread and butter plate, parallel to the edge of the table with the handle toward the right and the spreading edge turned toward the center of the plate.

Serving silver

Serving silver is placed on the table convenient to the dish for which it is to be used or at the right of the spoons on the cover of the person who is to serve.

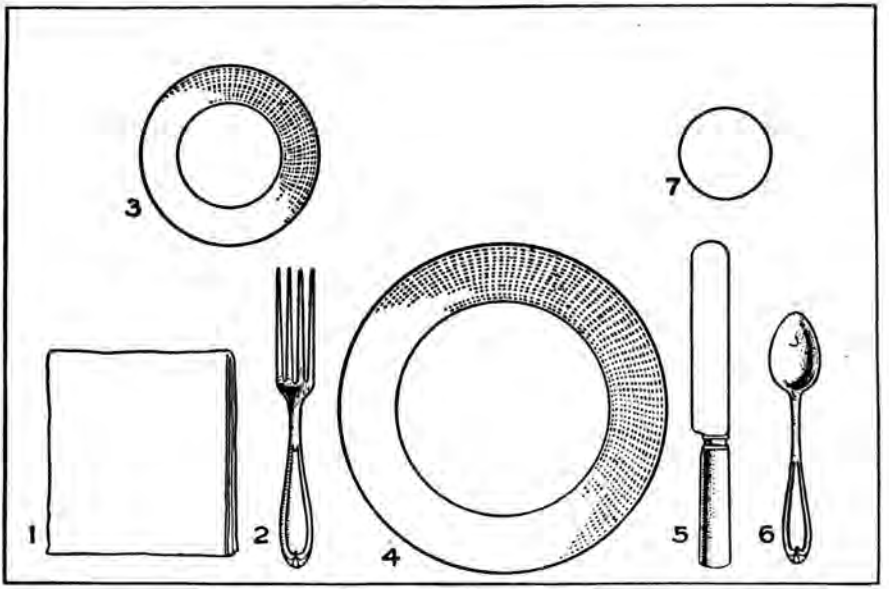

FIGURE 14. ARRANGEMENT OF A COVER

1. Napkin
2. Fork
3. Bread and butter plate
4. Plate
5. Knife
6. Spoon
7. Water glass

The carving knife may be placed at the right of either the platter or the server's individual silver; and the serving fork, at the left of either the platter or the server's individual silver.

Glassware and china

The water glass, three-fourths full, is placed at the right just above the tip of the knife.

The bread and butter plate is placed at the tip of the fork slightly to the right or left.

If individual salad plates are to be used, they are usually placed at the left of each cover, below the bread and butter plate. If no beverage other than water or milk is served with the main course, the salad plate may be placed at the right of the dinner plate.

The milk glass is placed at the right of the water glass, a little nearer the edge of the table than the water glass. The same position is used for iced tea.

The cup and saucer are placed at the right of the teaspoons, with the handle of the cup parallel with the edge of the table. Cups and saucers should not be at the individual places at the beginning of the meal. If a hot beverage is served at the table, the cups and saucers may be arranged in front of the cover of the hostess; sugar and cream in front at the right; and the coffee.

tea or cocoa pot at the right just beyond the sugar and cream. A pitcher of extra milk may be placed to the right of the hostess or some other member of the family.

Salts and peppers

These look better if placed in a straight line parallel with the edge of the table. If individual sets are used, they are placed in front of each cover. Otherwise they may be put where convenient, but kept parallel with the edge of the table.

Serving-dishes containing meat, potatoes, and vegetables should be grouped around the cover of the person who is to serve them. The main dish or platter is placed directly in front of the server, generally the man of the family.

Chairs

So that chairs do not have to be moved much for sitting, it is advisable to place them for a meal in front of the covers with the front edges on a line with the edge of the tablecloth.

Table decorations

Fresh flowers, fruits, vegetables, gourds, leaves, and small plants make attractive centerpieces for a table. Any floral arrangement on the table should be low enough not to obstruct the view across the table. Flowers with a heavy odor are not pleasing to some persons at the table.

Candles are attractive on a table when artificial light is needed. Candle light is more enjoyable if the candles are tall enough to prevent glare in the eyes of the seated persons, and the light is sufficient for one to see to eat.

TABLE SERVICE

Boys and girls enjoy having food served attractively, and Paul and Jerry as well as Janet and Marjorie were anxious to find how it is done. They realized that they enjoyed food more when it was served in an orderly fashion.

They found that several styles of table service are used, but they were particularly interested in the informal family service in which the host and hostess do the serving. They liked this because it is convenient and suitable for their families alone or when a few guests come in.

Informal family service

As the family enters the dining room, they see the table set, with filled water glasses in place, bread, butter, relishes, and any other cold foods already on the table, and a pile of warm dinner plates in front of the host. The pile of plates should not be too high for the host to serve conveniently. Extra plates may be placed on a table nearby. The hot foods are brought in just as the family sits down, so that there is no possibility of their being merely lukewarm.

The host is usually the father, and the hostess is the mother. The host carves and serves the meat, the potatoes, and the vegetables or other main dish. If desired, the hostess, or a person next to the host, may serve the vegetables or salad. The platter or main dish is placed directly in front of the host's cover, with the vegetables to the right and left. The plates are piled between the host's knife and fork. The serving silver is on the table at the cover of the person serving. The host places the food on the top plate, then lifts the plate and passes it to the right or left.

As the plates are filled, and the host passes them to the right or left he

PHOTOGRAPH FROM DIVISION OF COOPERATIVE EXTENSION

FIGURE 15. INFORMAL FAMILY SERVICE
This is an attractive way to serve dinner

asks that the first plate be passed either to the guest of honor or to the hostess. The rest of the plates are passed in sequence around the table. If the host asks one's preference as he serves, it is courteous to express it.

If water glasses need to be refilled during the meal, the daughter or son may do so. The pouring may be done without removing the glasses from the table, but if necessary to handle the glass, this should be done by holding it near the bottom. For a small family group the pitcher may be on the table and the glasses passed.

The bread and butter and relishes are started by the person nearest to them. If this happens to be a guest, the hostess asks him to please help himself and pass them on.

If the daughter (or son) is waiting on the table, after the main course is finished, she rises quietly and places her partly folded napkin at the left of her plate. The food should be removed first, and then the plates and any unused silver or dishes not needed for the next course. Starting with the hostess all the soiled plates from one cover should be removed before going on to the next. No stacking is done in front of a person. An accepted method is to remove from the left with the left hand except for the beverages, which are placed and removed from the right with the right hand. If the hostess is removing the plates, she starts with the person on her right and continues in regular order around the table, but it is always better to have the hostess remain seated throughout the meal. A tea wagon or small table placed near the hostess for soiled dishes, extra dishes, and the dessert is convenient. If the table needs to be crumbed between courses, this may be done with a clean, folded napkin, and plate.

The dessert may be served at the table by the host or hostess. Then the dishes needed for the dessert are placed in front of the one to serve, with the serving silver on the side as for the main course, and the dessert in front of the dishes. The passing of the dessert dishes is the same as for those of the main course.

If preferred, the dessert may be served in the kitchen and several dishes brought in at one time. If sauce dishes or sherbet glasses are used, plates should be put under them.

The beverage may be served by the hostess with the main course or with the dessert. It may be poured at the table or in the kitchen.

Serving oneself at the table

Janet and Marjorie found that in some homes, particularly in large families, each person served himself. This type of service is not so attractive as the informal family service with the serving done by the host; if used, this method is best carried out in the following orderly fashion.

The food for the main course is brought to the table in serving dishes just as the family sits down. It is placed in an orderly way on the table within easy reach, with the serving silver at the right of each serving dish. The host or hostess may start passing the serving dishes or may ask the one nearest a serving dish to help himself and pass it. All food should be passed in the same direction so that no one will receive two dishes at one time. After everyone has been served, the serving dishes are returned to a convenient place on the table.

Before dessert is served, the food from the main course is all removed from the table. Then the plates are removed. The dessert is served in the same way as is done in the informal family service.

Serving plates in the kitchen

Occasionally it is more convenient to serve the food in the kitchen and carry the filled plates to the table. The hostess or guest of honor is then served first. The bread, butter, and relishes are on the table and passed when everyone has been served with the main course. The table is cleared and dessert brought on in the same manner as described in the informal family service in which host and hostess serve.

Buffet service

A large group can easily be served informally in the home by using the buffet style. The food, silver, china, and linen are arranged on the table in an orderly way most convenient for the guests. A centerpiece, such as flowers or a bowl of fruit, makes the table attractive. Guests fill their own plates and carry them to small tables placed about the house, or the plate may be held on the lap. Sometimes trays are used to hold the plate, silver, and glass or cup.

Setting the table

Plates

Large dinner plates are used so that all the food for the main course may conveniently be placed on them, with room left for the cup. No saucer is necessary. The plates are stacked at one end of the table with extra ones on a table nearby.

Food

The food should be the kind that can be easily eaten without the use of a knife. The main dish is placed conveniently near the plates. Other food is arranged on the table for guests to help themselves as they pass along. Buttered rolls or bread or sandwiches are best to use to eliminate need for spreading. If salad is on the menu, it is served on the plate with the main course.

Beverage

The beverage and cups or glasses for it are placed at the other end of the table if it is to be served with the main course.

Silver, napkins, and water glasses

Serving silver is placed on the table near the food. Individual silver, napkins, and water glasses are arranged where they may be picked up most conveniently.

Serving

First servings

Guests may help themselves or the hostess may sit at one end of the table and serve the main dish and vegetable and some other person sit at the other end and serve the beverage.

Second servings

Guests help themselves or the hostess may pass the dishes of food.

Dessert

Before the dessert is served, the serving dishes of the main course are cleared off. The dessert dishes and needed silver are placed on the table. The soiled plates can be put on an extra table or tea wagon or carried to the kitchen. Guests help themselves to dessert or it may be passed to them by those assisting the hostess.

TABLE MANNERS

JANET and Paul and Marjorie and Jerry often discussed how to be mannerly and gracious at all times. They decided that it was not enough to learn rules of etiquette to be used for special occasions, but that they needed the ease and poise that come with good manners used every day and everywhere.

"Well," said Marjorie, "I think it is easy to be 'well mannered' if one is thoughtful and considerate of others."

Marjorie was right. The basis of all courtesy is an unselfish consideration for others. Manners that are put on for company or that "stick out like a sore thumb" are superficial, unnatural, and displeasing.

To everyone there comes a time, however, when he or she realizes the value of good manners, and that home is the place to practice them. Among strangers one is judged by his manners, rather than by his scholarship or popularity in school. It is not courteous to criticize the table manners of other persons.

Table manners seem difficult for some young people to learn, therefore the following hints are given:

Be prompt. It is inconsiderate to delay other people and food is not improved by waiting. It is not mannerly to leave the table before the rest of the family, but, if this is necessary, one may excuse himself and go.

Be clean and neat and fully attired before coming to the table. Clean hands are those that have just been washed.

Watch your step in eating. It is most objectionable for one to eat fast, chew with mouth open, take large bites, or make noises with the mouth.

Since posture is important for good digestion as well as for good looks, one should sit erect with feet on the floor. The arm should be lifted with each mouthful so that the food is brought to the mouth and not the mouth to the food. A slice of bread or large roll is broken before buttering. A mouthful of meat is cut from the piece instead of cutting up the whole piece at once. When tasting a spoonful of some very hot or cold food, such as ice cream or hot soup, only enough should be taken in the spoon to eat at once.

A large napkin is placed across the lap with the first fold retained, but a small tea napkin is completely unfolded on the lap.

Do your share to keep the table conversation pleasant. Mealtime is a social time and should be pleasant always. The table is not the place to talk of unpleasant subjects, since digestion is better when one is happy. The hostess or host, mother or father, is usually the one to draw everyone into the conversation. At a family dinner general conversation is best, rather than talk between two members of a family group. Reading at the table is permissible only when alone. If an accident occurs at the table, it is best merely to express regret and to consider the incident closed.

The use of flat silver

If puzzled as to what piece of silver to use, it is safe for one to watch the hostess and follow her. The piece of silver to use next is usually the one farthest from the plate. When in doubt as to whether a fork or spoon is correct, it is safe to use a fork. Silver is left in its place until needed and is in the hand only while cutting or conveying food to the mouth.

When passing your plate for a second serving, place the knife and fork across the side of your plate: the knife at the right with the sharp side toward the center of the plate, the fork with tines up. This is also the customary position for knife and fork at the end of the meal. When using the fork alone, place the knife across the right side of the plate, sharp edge toward the center. Never rest the silver from the edge of plate to table like a gangplank.

Do not use you own spoon for the sugar bowl, your own fork for the cold meat, or your own knife for the butter. Do not spear your bread with a fork.

A knife is used only for cutting or for buttering bread if an individual

butter spreader is not provided. The knife and fork should be held almost parallel with the top of the table when cutting, with the forefinger extended a little on top of the knife-blade to guide it. The fork in cutting position is held in the left hand with tines down, and after one mouthful is cut, the American custom is to transfer the fork to the right hand, and, with tines up, convey food to the mouth. The English custom is always to keep the fork in the left hand. The bowl of a soup spoon should be turned away from the

FIGURE 16. POSITION OF KNIFE AND FORK FOR CUTTING
The water glass has been removed to show more clearly the knife and fork

FIGURE 17. CARRYING FOOD TO THE MOUTH

person as he dips up the soup. All spoons, forks, and knives, handles and all, are placed on plates after finishing, and not left in cups or sherbet glasses or on the table.

After an informal meal with the family or friends it is thoughtful of one to show appreciation for good food.

If every single detail of the meal for a guest has been carefully attended to by the hostess, a guest can truthfully say on leaving, "Thank you so much for inviting me, I have enjoyed every moment."

FIGURE 18. POSITION OF KNIFE, FORK, AND BUTTER KNIFE AT END OF MAIN COURSE

FIGURE 19. POSITION OF SPOONS AT END OF DESSERT COURSE

RECIPES

GENERAL INFORMATION

Table of measurements

3 teaspoons = 1 tablespoon
16 tablespoons (dry ingredients) = 1 cup
2 cups = 1 pint
2 cups sugar = 1 pound
2 cups butter = 1 pound
4 cups flour = 1 pound
2 tablespoons butter or fat = 1 ounce
2 tablespoons liquid = 1 ounce
4 tablespoons sifted flour = 1 ounce
16 ounces = 1 pound

All of the recipes given are based on level measurements using standard measuring cups and spoons

Oven temperatures for baking and roasting

Slow oven	250° F. to 350° F.
Moderate oven	350° F. to 400° F.
Hot oven	400° F. to 450° F.
Very hot oven	450° F. to 500° F.

Substitutions in cooking

1 square chocolate = 3 tablespoons cocoa
1 cup pastry flour = 1 cup bread flour less 2 tablespoons
1 tablespoon cornstarch = 2 tablespoons flour (for thickening)
1 teaspoon baking powder = ¼ teaspoon soda and ½ teaspoon cream of tartar
1 cup milk = ½ cup evaporated milk and ½ cup water
1 cup milk = 4 tablespoons powdered milk and 1 cup water
1 cup butter = ⅞ cup lard + salt

MILK

White sauces

	Liquid	*Fat*	*Flour*	*Salt*
Thin	1 cup	1 tablespoon	1 tablespoon	¼ teaspoon
Medium	1 cup	2 tablespoons	2 tablespoons	¼ teaspoon
Thick	1 cup	3 tablespoons	3 tablespoons	¼ teaspoon

The liquid may be milk, stock, or strained tomato. *Thin* sauce is suitable for soups and some gravies, *medium* sauce for creamed dishes, and *thick* sauce for the basis of croquettes and soufflés.

1. Melt the fat and add the flour and the seasoning.
2. Remove this mixture from the heat and add the milk gradually, stirring constantly to make a smooth paste. Add the salt.
3. Return the mixture to the heat, stirring steadily until it boils. Boil it for 2 minutes. If made in a double-boiler, stir the mixture constantly until it thickens.

Cream soups

2 cups vegetable purée
2 cups thin or medium white sauce

1. Prepare the purée by forcing the thoroughly-cooked vegetable with the liquor through a strainer.
2. Make a white sauce, add the purée to this, and cook the mixture over water until the flavors are blended.

The thickness of the white sauce depends upon the character of the vegetable purée. The thin sauce is usually satisfactory.

Cream of tomato soup

2 cups tomatoes
¼ cup water
1 slice onion
2 cups medium or thin white sauce

1. Simmer the tomatoes, onion, and water for 5 minutes.
2. Strain the juice through a strainer, pushing all the pulp through.
3. Make a white sauce.
4. Reheat the tomato juice and add it slowly to the hot white sauce, stirring constantly. Salt to taste. Serve at once.

Creamy rice pudding

Temperature 300° F.
Time of baking, about 3 hours

½ cup rice
⅓ cup molasses
¼ teaspoon salt
½ teaspoon cinnamon
4 cups milk
1 tablespoon butter

1. Wash the rice.
2. Mix all the ingredients together.
3. Pour the mixture into a buttered baking dish and bake, stirring three times during the first hour to prevent settling.
4. At the last stirring add the butter.

Cornstarch pudding

2 cups milk
2½ tablespoons cornstarch
3 tablespoons sugar
⅛ teaspoon salt
½ teaspoon vanilla

1. Mix the cornstarch, the sugar, and the salt in the top of a double-boiler.
2. Mix one-fourth cup of cold milk with the cornstarch mixture.
3. Add the rest of the milk to the cornstarch.
4. Cook the mixture over direct heat, stirring constantly until it boils.
5. Cook the mixture for 15 minutes over boiling water, stirring occasionally.
6. Add the flavoring. Mould and chill.

Chocolate cornstarch

Reduce the cornstarch to 2 tablespoonfuls and mix 3 tablespoonfuls of cocoa with the dry ingredients, or add from 1 to 1½ ounces of melted chocolate after the mixture has thickened.

Cocoa sirup

6 tablespoons cocoa or 2 squares unsweetened chocolate
½ cup sugar
¼ teaspoon salt
2 cups boiling water

1. Mix the cocoa, the sugar, and the salt.
2. Add the boiling water gradually, stirring constantly.
3. Boil for 5 minutes or until a thin sirup is formed.
4. Cool, and turn into a jar. Keep it in a cold place.
5. Use from 1 to 2 tablespoonfuls of cocoa sirup to 1 cup of hot or cold milk.

VEGETABLES AND FRUITS

Baked potatoes and tomatoes

Temperature 325° F.
4 cups raw diced potatoes
¼ cup tomato pulp
½ cup water
¼ cup oil or butter
Time of baking, 40 minutes
1½ teaspoons salt
1 teaspoon paprika
1 small onion

1. Wash, pare, and dice the potatoes.
2. Place the potatoes in a baking dish and add the other ingredients.
3. Bake the mixture in a slow oven for 40 minutes.

Timetable for cooking vegetables, in minutes

Vegetable	Baking	Steaming	Boiling		Boiling time
			Amount of water	Covered	
	Minutes	*Minutes*			*Minutes*
Asparagus		20 to 25	Enough to cover lower part of stalks	No	5 to 10 (tips) 20 to 25 (butts)
Beans, green		35 to 40	Large amount	No	30 to 35
Beans, lima			Enough to cover	No	
Beets, new, small Beets, new, large Beets, old, small Beets, old, large	60 to 90	60 to 90	Enough to cover well	Yes	40 to 60
Broccoli		18 to 20	Large amount	No	14 to 18
Brussels sprouts		10 to 12	Large amount	No	9 to 10
Cabbage, green (shredded)		8 to 10	Large amount	No	6 to 8
Cabbage, red (shredded)		25	Enough to cover well	Yes or no	10 to 15
Carrots, whole, small, medium	35	25 to 30	Enough to keep from burning	Yes or no	20 to 25
Cauliflower, small pieces in water		22	Large amount	No	8 to 10
Onions, pieces or small whole in water Onions, large whole	50 to 60	40	Large amount	No	25 to 35
Peas		20 to 25	Enough to cover	No	18 to 20
Potatoes, sweet	35 to 45	25 to 35	Enough to cover	Yes	15 to 25
Potatoes, white, small Potatoes, white, large	45 to 60	30 to 35	Enough to cover	Yes	25 to 35
Spinach, with or without water		10 to 11	Large amount or only that which clings to leaves	No	6 to 10
Squash	30 to 35	20 to 25	Enough to keep from burning	Yes or no	20
Tomatoes	20 to 30	20 to 25	None	Yes	15 to 25

Vitamin vegetable salad

Raw spinach	Radishes
Carrots	Celery
Cucumber	Cauliflower
Cabbage	Lettuce
Green pepper	Water cress
Tomatoes	Parsley
Beets	Onion

French dressing

Note: Since vegetables, as well as appetites, vary in size, when preparing this salad each person will have to be his own judge of quantity. Some of the suggested vegetables may be omitted, but the combination of all, or most, of them is excellent.

1. Wash the small, tender, inside leaves of spinach until they are free of sand.
2. Peel the carrots; wash and shred the cabbage.
3. Scrub the cucumbers, green pepper, radishes, celery, and several cauliflower buds with a vegetable brush.
4. Place all of the vegetables in ice or cold water for an hour, to become crisp.
5. Wash the lettuce, the water cress, and the parsley, place them in the icebox or a cool place to cool.
6. Just before serving time, place the lettuce and water cress in a large salad bowl.
7. Add the tomatoes, which have been peeled and sliced crosswise or wedge-shaped, and the beets, which have been peeled and grated.
8. Drain the chilled vegetables, dry them thoroughly between towels. Slice cucumber and radishes very thin; grate the carrots and divide the cauliflower buds in small pieces, and add to the bowl, together with the shredded cabbage and spinach leaves.
9. Chop together the peeled onion, parsley, green pepper, and celery, and combine them with the rest of the mixture in the bowl.
10. Moisten the mixture with French dressing just before serving, tossing together only slightly. Serve immediately.

French dressing

¼ cup vinegar
½ cup oil
Onion juice, if desired
½ teaspoon salt
¼ teaspoon paprika
1 teaspoon sugar

1. Mix the salt, the sugar, and the paprika together.
2. Add the vinegar and the oil.
3. Shake the mixture in a glass jar with a top or beat it with an egg beater. Shake it thoroughly before using.

Baked apples

Temperature 400° F. Time of baking, from 20 to 30 minutes

3 pounds apples (about 10 medium sized)
⅓ cup sugar (about 1½ teaspoons to each apple)
Salt if desired

1. Select apples of uniform size.
2. Wash and core the apples, and place them in a baking dish having a cover.
3. Pour the sugar into the cored centers of the apples.
4. Cover the apples and bake them in a hot oven. The longer baking time given above is for larger apples. The baked apples should be tender but not soft, and should retain their shape.
5. After the apples are taken out of the oven, allow them to stand in the covered baking dish for 10 minutes; this will complete the cooking

process and will help to retain the shape, which may be destroyed if cooking is completed in the oven.

Variation: The centers of apples may be stuffed with dried fruit; brown sugar may be used instead of white sugar.

Prune pudding

¼ pound prunes
1½ cups cold water
½ cup sugar
2 cups prune water
1-inch stick cinnamon or ¼ teaspoon cinnamon
4 tablespoons flour
4 tablespoons cold water

1. Wash the prunes in several waters and soak them over night in the 1½ cups of cold water. Cook them in the same water until they are tender.
2. Drain off and save the liquid.
3. Remove the seeds and cut the prunes in small pieces.
4. Add to the prunes, the sugar, the cinnamon, and the hot prune juice (if juice does not measure 2 cups add enough water to make up the measure).
5. Bring this to the boiling point and simmer for 10 minutes, then add the thickening of flour and cold water mixed to a smooth paste.
6. Cook the mixture for 10 minutes longer over slow heat or over boiling water.
7. Remove the stick cinnamon if used and pour the mixture into a bowl and mould. Serve cold.

Fruit sandwich filling[35]

Yield — 1 quart

1 pound raisins
½ pound dried figs
1½ cups sugar
1 tablespoon flour
¼ cup cold water
½ cup orange juice
Lemon juice and grated rind of 2 lemons

1. Chop the raisins and figs and combine them with the flour and sugar.
2. Add the orange juice, the lemon juice, and the water, and cook the mixture in a double-boiler or steamer until it is thick.
3. Use for sandwich or graham-cracker filling.
4. This may be kept in a covered container in a cool place for some time.

Date bars

Temperature 325° F.
⅔ cup flour
¼ teaspoon salt
½ teaspoon baking powder
1½ to 2 cups dates (sliced)
Time of baking, 40 minutes
½ cup chopped nuts or 1 cup grated cocoanut
2 eggs
½ cup sugar

[35]Refer to other recipes for sandwich fillings, page 82.

1. Sift the flour, measure, add the salt and the baking powder and sift again.
2. Add the dates and nuts to the dry ingredients.
3. Beat the eggs until light; if the eggs are small, 2 or 3 tablespoons of water may be added.
4. Add the sugar gradually, and beat.
5. Combine the dry ingredients, dates, and nuts with the eggs and sugar.
6. Spread thin in well-oiled pans, and bake in a very moderate oven for about 40 minutes.
7. Cut in strips 1 inch by 3 inches. Roll the strips in powdered sugar and store them in a tightly-covered can or box.

Panama salad

Lettuce, pineapple, orange, grapefruit, cherry, green peppers.

1. Place a slice of pineapple on a lettuce leaf.
2. Alternate wedges of orange and grapefruit on the pineapple slice until it is covered.
3. Place a cherry in the shape of a flower on top of the fruit and garnish the sides of the cherry with small pieces of green pepper cut in a diamond shape.
4. A rosette of cheese may be piped on top of fruit in place of cherry if desired.
5. Serve with French dressing.

Apple and date salad

4 cups tart apples
1½ tablespoons lemon juice
½ teaspoon salt
1 tablespoon sugar
1 cup dates (cut in pieces)
Boiled dressing

1. Mix the apples, dates, lemon juice, salt, and sugar.
2. Mix with boiled dressing and mix thoroughly.
3. Chill and serve on shredded lettuce; garnish with nuts.

Boiled dressing

4 tablespoons melted butter
2 tablespoons flour
1 cup milk
1 tablespoon sugar
1 teaspoon salt
1 teaspoon mustard
¼ cup vinegar
2 eggs
Few grains cayenne pepper

1. Melt the butter in the top of a double-boiler.
2. Add the flour, stir until smooth.
3. Add the milk and cook the mixture until thick.
4. Beat the eggs slightly, add the sugar, the salt, the mustard, and the cayenne pepper.

5. Pour the mixture of milk, butter, and flour over the egg mixture, beating constantly.
6. Return the mixture to the double-boiler and cook it until thick.
7. Add the vinegar just before removing the dressing from the stove.

EGGS

How to care for eggs

Boys and girls who keep chickens know that eggs should be kept cold. If they are stored at room temperature for only a few hours, they undergo a change and are not so "fresh." In fact, eggs are as perishable as milk, cream, butter, or meat. One can readily tell a fresh egg from a stale one, for, when broken in a saucer, the fresh egg will have no unpleasant odor and the yolk will stand up high above the white surrounding it. A stale egg has a flattened yolk and the white is watery.

How to cook eggs

The eating of eggs is a simple matter, for they may be cooked in many ways—soft-cooked or hard-cooked in the shell; poached; scrambled; fried; shirred; or made into an omelet. Eggs may be the main dish for a meal; they may be cooked in many combinations with other foods; or made into desserts. Like all the protein foods, eggs require moderate heat in cooking. High temperatures toughen the egg white.

Eggs cooked in the shell

Use two cups of water for the first egg and one cup for each additional egg.

Method 1. Put the eggs into boiling water, cover the kettle, and place it where the water will keep hot but will not boil.

Method 2. Put the eggs in the top of a double-boiler, and cover them with boiling water. Put the cover on the boiler, and place the boiler over the bottom part which contains boiling water.

Method 3. Put the eggs in cold water, cover the kettle, and bring the water slowly to the simmering point.

Time: The time of cooking varies with the size of the egg, the temperature of the egg before placing it in the water, and the temperature at which the water is held.

Soft-cooked eggs:	About 5 minutes for methods 1 and 2
	About 2 minutes for method 3
Medium-cooked eggs:	About 10 minutes for methods 1 and 2
	About 5 minutes for method 3
Hard-cooked eggs:	About 30 minutes for methods 1 and 2
	About 20 minutes for method 3

When eggs are hard-cooked they should be cooled in water immediately. This cooling causes the egg to shrink from the shell so that the shell can be removed more easily.

Scrambled eggs

5 eggs
½ cup milk or cream
½ teaspoon salt
⅛ teaspoon pepper
2 tablespoons fat

1. Beat the eggs, the milk, and the seasoning together just enough to break up the yolks and blend the whole mixture.
2. Melt the fat in a frying pan or double-boiler.
3. Pour in the mixture and cook it slowly.
4. Stir occasionally from the bottom and sides so that big flaky masses are formed.
5. Remove the mixture from the heat when it begins to set. Care must be taken not to overcook the eggs. It is better to have them somewhat underdone when they are removed from the skillet, for the heat in the eggs completes the cooking.

Baked eggs

Temperature 350° F.
Time of baking, about 15 minutes
6 eggs
½ teaspoon salt
6 tablespoons milk

1. Grease 6 individual custard cups or muffin tins.
2. Break an egg into each cup.
3. Sprinkle the eggs with salt and add 1 tablespoon of milk to each.
4. Place the cups in a shallow pan containing boiling water.
5. Cover the pan and bake the eggs in a moderate oven until they are set.

Variations:

Eggs baked in a spinach ring: Make a nest of one-fourth cup cooked and seasoned spinach in a custard cup. Place an egg in the center and bake as for baked eggs.

Eggs baked in bacon ring: Partially cook the bacon and line custard cups with it. Bread an egg into each cup and bake as for baked eggs.

Soft custard

3 cups milk
4 eggs or 8 egg yolks
4 tablespoons sugar
½ teaspoon salt
4 drops vanilla

1. Beat the eggs slightly, add the sugar and the salt and stir until all is well mixed.
2. Add the milk to the egg and stir until all is well mixed, then strain the mixture into the top of a double-boiler.
3. Cook the mixture, stirring constantly, over water which is kept *just below the boiling point*, until the custard coats the spoon. (Have the top of the double-boiler well immersed in hot water.)

4. Add the flavoring, and cool the custard immediately.

Note: Either cold or scalded milk may be used. Scalded milk is preferable when using more than one cup of milk. If the custard is cooked too long, it will curdle. Should this happen, remove the custard from the heat and beat it with a rotary egg beater until smooth.

Variations:

1. Brown sugar: Substitute brown for white sugar.
2. Fruit: Serve over sliced bananas or oranges or other fruit.
3. Cake: Serve soft custard over stale cake.

Floating island

This is a soft custard with "islands" of meringue. Make the custard using 1 whole egg and 1 yolk for each cup of milk. When cool, pour the custard into a serving dish and dot it with meringue made from the extra egg white.

Meringue

1 egg white
Flavoring
1 to 2 tablespoons sugar

Beat the egg white until foamy, add the sugar gradually, and continue beating until the white is stiff and fine-grained. Add the flavoring.

Baked custard

Temperature 325° F.

3 cups milk
3 to 4 eggs
4 tablespoons sugar
⅛ teaspoon salt
1 teaspoon vanilla or
⅛ teaspoon nutmeg

1. Beat the egg slightly.
2. Add the salt, the sugar, the flavoring, and the milk, either hot or cold. (If hot milk is used, add it slowly to the egg.)
3. Stir the mixture until the sugar is dissolved.
4. Strain the mixture into custard cups.
5. Set the cups into a pan of hot water; the water should be as high on the outside of the cups as the custard mixture is on the inside.
6. Bake the custard in a slow oven until firm; test it with a silver knife. When the knife comes out clean, the custard is done.

Variations:

1. Maple custard: Substitute 3 tablespoons of maple sirup, or 2 tablespoons of finely shaved maple sugar, for the granulated sugar.
2. Fruit custard: Add 1 tablespoon of raisins or chopped dates or a few sections of orange before baking. A half of a cooked peach, well drained, may be placed in the bottom of the custard cup before adding the custard.

Bread pudding

3 cups milk
1½ cups bread crumbs (soft, not dry)
3 egg yolks, or 1½ to 2 eggs
4 tablespoons sugar
⅛ teaspoon salt
1 teaspoon vanilla

Use the method given for baked custard, after soaking the crumbs in the milk.

Queen of puddings

When bread pudding is baked, spread it with jelly, cover it with meringue, and brown it in a slow oven (from 300° to 350° F.)

Sponge cake

Temperature 300° to 325° F. Time of baking, from 50 to 60 minutes

4 eggs
1 cup sugar
1 tablespoon orange juice or lemon juice or a combination of both
2 tablespoons water
¼ teaspoon salt
1 cup flour

1. Sift the flour, measure, add the salt, and sift three times.
2. Separate the eggs.
3. Beat the whites until frothy, and add ½ cup of sugar gradually.
4. Beat the yolks until they are very light and lemon colored, add the remainder of the sugar, and the fruit juice and the water which have been mixed together. Beat thoroughly.
5. Pour the yolk mixture over the whites and fold it in lightly until no yellow shows.
6. Fold in the flour and salt with a down-up-and-over motion.
7. Bake in an ungreased tube pan.
8. Cool the cake in the pan turned upside down on a cake rack.

For *tiny cup cakes*, grease the boottom but not the sides of the cup-cake tins. Bake in a moderate oven (350° F.) for from 18 to 20 minutes.

Standard angel food cake

Temperature 300°–325° F. Time of baking, 1¼ hours

1 cup egg whites
1 teaspoon cream of tartar
½ teaspoon salt
1¼ cups sugar
1 cup pastry flour
1 teaspoon flavoring

1. Sift ¼ cup sugar with the flour.
2. Beat the egg whites until frothy, add the cream of tartar and the salt and continue beating until the egg whites are stiff but not dry.

3. Sift a little of the sugar over the whites and fold it in, continuing this process until all the sugar has been added.
4. Fold in the flour-sugar mixture, 3 or 4 tablespoonfuls at a time, until all has been added.
5. Fold in the flavoring, and bake in an ungreased angel-food pan in a slow oven.
6. Cool in the pan turned upside down on a cake rack.

MEAT, POULTRY, AND FISH

How meat should be cared for in the home

Meat should be kept, uncovered, in one of the coldest parts of the refrigerator, where the temperature will not go above 45° F. Paper that is not waxed absorbs juice and may also impart undesirable flavor, hence it should always be removed. Meat spoils more rapidly if kept covered because the temperature in a closed vessel is about 5° higher than in an uncovered one.

Characteristics of meat from different animals, and suggestions for cooking

Beef

Appearance

Beef is the meat of cattle. Good-quality beef is well marbled with fat, and the color of the lean is a light or cherry red. Marbling is the intermixture of fat and lean that makes beef tender and juicy when cooked. The lean of less good-quality beef is dark red and the fat is on the outside and often yellow in color.

Tender and less tender cuts

Beef has tender cuts from the muscles that lie along the backbone. The less tender cuts are from the parts of the animal that are exercised most, since the connective tissue has become fully developed there. In general, such parts are the leg, shoulder, and neck.

Food value of different cuts

The less tender cuts are just as nourishing and may be more flavorsome than the more tender ones, and by proper cooking can be made tender and palatable.

Cooking

Tender cuts of beef, containing a small amount of connective tissue, are best cooked by dry heat—roasting, broiling, and pan broiling. A tender roast may be cooked in an uncovered pan without added liquid at a constant low temperature of 300° F. until the desired degree of doneness is reached. Since

searing—that is, quick cooking of the surface—does not keep in juices, it is unnecessary.

The less tender cuts, containing a large amount of connective tissue, require moist heat to soften them and to make them tender. Typical ways of preparing the less tender cuts include braising and stewing. The meat is seasoned and browned, using a moderate heat, then the liquid is added, the container is covered, and the meat is allowed to cook slowly until done.

Pork

Appearance

Pork is the meat of the pig. The lean is grayish pink, turning to a delicate rose color in the older animal. The flesh is relatively firm and fine-grained and free from excessive moisture; the lean is well marbled and covered with a firm white fat, free from fibers. Pork contains a larger amount of fat than does any other meat. Pork is sold fresh or cured. Cured pork is meat that has been treated with salt and other substances, and then smoked. Smoked ham and bacon are cured pork.

Food value of different cuts

The less tender cuts are just as nourishing and may be more flavorsome than the more tender ones, and by proper cooking can be made tender and palatable.

Cooking

All cuts of pork are tender, hence all chunky cuts may be cooked by roasting, using the same temperature and method as are used for roasting a tender roast of beef. Rapid cooking of roasts or chops drives off the fat that contains much of the flavor.

Pork sometimes contains trichinae parasites, which if not destroyed by thorough cooking, will cause trichinosis. Moreover, the flavor of pork is developed by long cooking; therefore care should be taken to cook all cuts to the well-done stage. A slice of roast pork should be grayish white in color, without even a tinge of pink.

Lamb

Appearance

The flesh of lamb is pinkish red in color; that of yearling and mutton is deeper red. The lean meat is fine-grained with a velvety texture, and is marbled with fat. The fat is clear, white, and brittle.

Legs, loin chops, and rib chops are most in demand. The shoulder and breast sections are not used so generally, but are equal in tenderness and flavor to the more popular cuts.

Cooking

All cuts of lamb are tender and may be cooked by dry heat. Most lamb cuts are cooked by roasting, broiling, or pan broiling, using a low temperature throughout the entire cooking time. Lamb is generally liked medium or well-done. It should be served very hot or entirely cold, never lukewarm, because the fat hardens just as soon as it begins to cool and is objectionable.

Removing the fell

The thin, papery covering over the outside of a lamb carcass is known as the *fell*. It does not affect the flavor of the lamb when cooked with it, but a leg of lamb keeps its shape better and cooks in less time if the fell is not removed. On the other hand, the shoulder, saddle, and rack are more attractive if the fell is removed, but they then take longer to roast unless rubbed well with flour.

Veal

Appearance

Veal is the meat of a calf about two months old. This meat is grayish or dull pink, almost white in color, has a very fine grain, and is fairly firm and velvety. Veal has little fat, which is clear, firm, and white. The flavor of veal is not so pronounced as that of beef.

Cuts of veal

Most of the leg of the calf is cut into veal cutlets, which are steaks corresponding to the round steaks of beef. The meat is more tender than round steak, the bone is smaller, and usually veal costs more. The upper part of the leg is used for roasting. The loin also is used for roasting, or is cut into slices called *loin chops*. The rib section is cut into roasts or chops. Heart, tongue, and liver of veal are desirable for cooking; and sweetbreads, the thymus gland of the calf, are considered a great delicacy.

Cooking veal

Although veal is tender, it contains a large amount of connective tissue which requires long, slow cooking. Since veal is usually cooked to the well-done stage, one should allow at least 30 minutes to the pound in a slow oven (300° F.).

Veal chops and cutlets are usually first browned in hot fat, then cooked slowly in a covered container. Other cuts may be braised, roasted, or stewed.

Poultry

Poultry includes chicken, turkey, duck, guinea, and goose. Chicken and turkey are the most commonly used poultry.

Appearance

Some points to look for in selecting good-quality poultry are: a broad, well-rounded breast with thick layers of white meat on each side of the breast bone; thighs well-covered with meat; fat well distributed over the entire carcass; a soft flexible breast bone, which may be tested by pressure on the tip. A soft breast bone indicates that the chicken is young.

The meat is fine grained and light in color; the skin is soft and oily, almost velvet-like to the touch. If the bird has not been well bled, the skin will be reddened and blue clots of blood will usually show through the skin of the neck. Such poultry does not keep well nor has it the good flavor of well-bled birds. Usually the best chicken for cooking is the short-legged, blocky type with the well-rounded body, rather than the long-legged, rangy type.

Cooking

For both tender and less tender poultry, a low temperature is best. Poultry may be roasted uncovered in a moderate oven (350° F.) or in a slow oven (250°–300° F.). No water should be added to the pan. The larger the bird the lower the temperature to be used and the shorter the cooking time per pound. Usually the time allowance for cooking should be 30 minutes a pound for a small bird about 3½ pounds in weight, and from 18 to 20 minutes a pound for a bird 10 to 16 pounds in weight. Basting, that is, brushing melted butter over the surface of the fowl, shortens the total cooking time.

Fish

It is of the utmost importance that fish be fresh, because fish spoils in a few hours if not iced. Before being placed in a refrigerator, fish should be wrapped in waxed or parchment paper, because otherwise the strong odor of the fish is imparted to other foods.

Appearance

In buying fish, care should be taken to see that the flesh is firm, the eyes bright and not sunken, the gills free from odor of taint, and the scales clinging close to the skin.

Cooking

Fish are either lean or fat, and although almost any variety of fish may be broiled, baked, or fried, fat fish are generally best when baked. Lean fish are often simmered, steamed, or made into chowder. As in cooking meat, the use of a low cooking temperature is important to obtain a tender product.

Recipes

Swiss steak

3 pounds round or chuck of beef, 1 to 2 inches thick
3 tablespoons melted suet
½ cup flour
1½ teaspoons salt
⅛ teaspoon pepper
2½ cups hot tomato juice and pulp or hot water

1. Sift the flour, the salt, and the pepper together and beat all thoroughly into the steak with a meat pounder. The beating makes the meat more tender, and the flour absorbs the juice.
2. Cut the steak into individual portions, if desired.
3. Sear the meat in the moderately hot fat in a heavy skillet or kettle.
4. Cover the meat with the tomato juice and pulp or the water, adding more if necessary.
5. Place a lid on the cooking utensil and simmer the mixture for 2 hours, or until the meat is so tender that it can be cut with a fork. If the gravy becomes too thick, add more liquid from time to time. There should be plenty of rich gravy to serve over the meat. Onions may be browned and cooked with the meat if desired.

Brown stew

Brown stew is made in the same way as Swiss steak or pot roast. For stew, cut the meat into 1-inch cubes and roll them in flour. Brown them well in hot fat, add water or tomatoes, cover, and simmer until the meat is tender. Onions, carrots, turnips, and potatoes may be added if desired.

Bacon

Cooked bacon should be crisp but not brittle.

To broil: Place the bacon on the broiling rack and cook it by direct heat until delicately browned. Drain it on absorbent paper.

To pan-broil: Place the bacon in a cold or warm (*not hot*) skillet. Cook it over moderate heat until it is delicately browned, pouring off the excess fat as it accumulates. Turn once if necessary. Drain it on absorbent paper.

To oven-cook: Place a single layer of bacon in a large shallow pan. Cook the bacon at about 350° F. until delicately browned, pouring off the excess fat as it accumulates. Drain on absorbent paper. A longer cooking time is required than for broiling.

Salmon loaf

Temperature 350° F. Time of baking, from 30 to 40 minutes

3 cups salmon
1 egg
1 tablespoon chopped parsley
1 slice onion, finely minced
1 cup bread crumbs
1 cup milk
1 teaspoon salt
¼ teaspoon pepper
2 slices bacon, chopped fine, or 2 tablespoons butter

1. Pick the bones from the salmon.
2. Add the rest of the ingredients in the order given, and mix all thoroughly.
3. Press the mixture into a greased bread pan, and bake it in a moderate oven (350° F.) for from 30 to 40 minutes.

A medium white sauce containing chopped parsley or chopped hard-cooked eggs may be served over the salmon loaf.

CEREAL FOODS

Whole-wheat muffins

Yield: 10 medium-sized muffins

Temperature 425° F. Time of baking, from 20 to 25 minutes

1 cup whole-wheat flour
1 cup white flour
1 tablespoon and 1 teaspoon sugar
3 teaspoons baking powder
1 egg
1 cup milk
3 tablespoons melted fat
½ teaspoon salt

1. Assemble the materials and check the oven temperature.
2. Grease the muffin tins.
3. Sift the flour and measure it.
4. Add the other dry ingredients and sift all together twice.
5. Melt the fat.
6. Beat the egg, add the milk, then add the fat (slightly cooled).
7. Pour the liquid into the dry ingredients. Stir only enough to dampen the dry ingredients (the mixture has a rough appearance).
8. Fill the muffin tins two-thirds full.
9. Bake in a hot oven.

Whole-grain quick bread

Temperature 325° F. Time of baking, 45 minutes

1 egg
1 cup milk
½ cup sugar
1 teaspoon salt
½ cup nut meats
½ cup raisins, cut fine (packed lightly in cup)
1 cup whole-wheat flour
1 cup white pastry flour
3 teaspoons baking powder
3 tablespoons melted fat

1. Assemble the materials and the equipment.
2. Check the oven temperature.
3. Grease an individual bread pan lightly.
4. Sift both flours separately and then measure them.
5. Add the other dry ingredients, and sift all together.
6. Add the nuts and raisins to the dry ingredients.
7. Melt the fat.
8. Beat the egg, add the milk, then add the fat (slightly cooled).
9. Pour the liquid into the dry ingredients. Stir until smooth.
10. Pour the mixture into the bread pan which has been greased slightly.
11. Bake the bread in a slow oven.

Baking-powder biscuits

Temperature, from 425° to 450° F. Time of baking, from 12 to 15 minutes

⅔ cup milk
2 cups flour
3 teaspoons baking powder
½ teaspoon salt
4 tablespoons fat

1. Assemble the materials and check the oven temperature.
2. Sift the flour and measure.
3. Add the other dry ingredients and sift together.
4. Blend the fat and the dry ingredients with a blender or two knives, until the mixture resembles coarse cornmeal.
5. Add the milk gradually, mixing smoothly.
6. Turn out on a slightly floured board, and knead gently while counting twenty.
7. Roll or pat out the dough until it is ½ to ¾ inch in thickness, cut the biscuits, and place them on a baking sheet.
8. Bake in a hot oven.

Whole-wheat yeast bread

Temperature 400° F. for 20 minutes, then reduced to 350° F.

Time of baking, from 50 to 60 minutes

3 cups liquid—milk, water or both (scalded)
2 cakes compressed yeast
3 teaspoons salt
3 tablespoons sugar or molasses
3 tablespoons melted fat
2½ cups white flour
About 5 cups whole-wheat flour

Since flours differ, it may be necessary to use more or less of the whole-wheat flour than the amount given in the recipe, to make a dough that does not stick to the hands or board.

1. Put the scalded liquid into the mixing bowl, and cool it to a lukewarm temperature.
2. Crumble the yeast cakes into the liquid.
3. Add the salt and the sugar or molasses.
4. Add the white flour and beat the mixture thoroughly with a wooden spoon.
5. Add the melted fat, and beat well.
6. Add enough whole-wheat flour to make a smooth dough that does not stick to the hands or board.
7. Sprinkle a little white flour on the board and turn the dough onto it.
8. With a knife or spatula scrape all particles of dough from the bowl. Grease the bowl well with the melted fat. During this process the dough has had a chance to rest or stiffen slightly.
9. Knead the dough thoroughly until smooth, adding white flour as needed to prevent the dough from sticking to the board.
10. Put the dough back into the greased bowl, and brush the entire surface with melted fat.
11. Cover the dough with a cloth and set the bowl into a pan of warm water, which should cover at least two-thirds of the height of the bowl. Let the dough rise until it is double in bulk.
12. Fold the dough under. Do not knead it. Let the dough rise until it is again double in bulk.
13. Fold the dough under as before and let it rise again. If necessary brush the dough again with melted fat. Unless the surface is kept covered with fat, a crust will form.
14. When the dough has risen the third time, shape it into loaves and put each into a greased bread tin. Brush each with melted fat and when it has doubled in bulk put it into a hot oven. After the first twenty minutes, reduce the heat a little and bake the bread for 1 hour.

Care of bread after baking: Remove the bread from the pan and turn the loaf crosswise over the pan or lay it on a rack. Do not let the wind blow on it. Do not cover it until cold.

Refrigerator rolls

Temperature 400° F. Time of baking, from 12 to 15 minutes

1 cake (½ ounce) yeast
2¼ cups scalded milk
½ cup sugar
2 teaspoons salt
⅝ cup fat (melted)
About 8 cups sifted all-purpose flour

1. Add the sugar and the salt to the hot milk.
2. When lukewarm, add the crumbled yeast and allow it to dissolve in the milk.
3. Sift the flour and then measure it.
4. Add about half of the sifted flour to the milk mixture.
5. Add the melted fat and beat the mixture well.
6. Add the remaining flour until the dough is stiff enough to knead.
7. Allow the dough to rise in a well-greased bowl. Fold it under and allow it to rise again.
8. If rolls are desired, cut off as much dough as needed, shape each roll and put them in a warm place to double in bulk.
9. Bake in a hot oven.
10. Grease the surface of the remaining dough, cover, and put it in the refrigerator. This dough can be kept satisfactorily for at least a week.

Increased color and flavor may be obtained by the addition of an egg. If an egg is added, reduce the fat to ½ cup.

Hot-water gingerbread

Temperature 350° F. Time of baking, from 30 to 40 minutes

1 cup molasses
½ cup boiling water
2¼ cups flour
4 tablespoons melted fat
1 teaspoon soda
1½ teaspoons ginger
½ teaspoon salt

1. Assemble the materials and check the oven temperature.
2. Sift the flour and then measure it.
3. Add the other dry ingredients to the flour and sift all together twice.
4. Add the water to the molasses, and mix this with the dry ingredients.
5. Add the melted shortening and beat the mixture vigorously.
6. Pour the mixture into a slightly greased shallow pan and bake it in a moderate oven.

Plain butter cake

Temperature 350° F. Time of baking, about 30 minutes

Yield: 2 layers 8 inches in diameter

⅓ cup fat
1 cup sugar
2 eggs
⅔ cup milk
1¾ cups cake or pastry flour
¼ teaspoon salt
2½ teaspoons baking powder (tartrate or phosphate)
or
2 teaspoons double-action baking powder
½ teaspoon vanilla

1. Light the oven and test from time to time to be sure that the temperature is accurate before the milk and dry ingredients are added to the cake mixture.
   Assemble the materials and check the oven temperature.
2. Line the pan with paper and grease it.
3. Sift the flour, measure, and add the baking powder and the salt. Sift these together three times.
4. Cream the fat well, add the sugar gradually, and continue creaming until the mixture is light and fluffy.
5. Add one egg, beat it well, then add the next egg and beat the mixture vigorously again.[16]
6. Alternate the dry ingredients and milk to which the vanilla has been added, starting with the flour and ending with the flour. Beat in the flour; stir in the milk.
7. Fill the cake pan half full. Bake the mixture until the surface rebounds to the touch and the cake shrinks from the sides of the pan.

One-egg cake

Temperature 350° F. Time of baking, from 25 to 30 minutes

4 tablespoons fat
1 cup sugar
1 egg, beaten
¾ cup milk
2 cups flour
3 teaspoons baking powder (tartrate or phosphate)
or
2 teaspoons double-action baking powder
½ teaspoon vanilla

Use the same procedure for mixing as that given for *Plain butter cake.*

[16]Or, the beaten egg yolks may be added to the mixture and the stiffly beaten whites added last.

SWEETS

Sugar sirup temperatures

Boiling point of water	212° F.	Very firm ball (butter scotch)	254° F.
Very soft ball (fudge)	234° F.	Hard ball (taffy)	268° F.
Soft ball (fondant)	238° F.	Brittle or Crack (divinity)	310° F.
Spin thread (frosting)	242° F.	Crackle or caramel (peanut brittle)	348° F.
Firm ball (caramels)	242° F.		

Candied orange or grapefruit peel

2½ cups fruit peel, cut in strips
Cold water
2 cups sugar
1 cup water

1. Save the peel from oranges or grapefruit and cut it into strips.
2. Place the peel in a large sauce pan with enough cold water to cover, bring the water to the boiling point and let it boil for about 20 minutes.
3. Drain off the water, repeat once for orange and three times for grapefruit.
4. Make a sirup of water and sugar, and when it is boiling add the peel carefully. Cook the peel until tender and clear, and white spots are formed on the peel. Cook it rapidly at first and then more slowly. Stir as little as possible.
5. Drain peel, roll in granulated sugar and place on a rack or platter to dry. Keep in covered tin box or glass jar.

Date and nut roll

2 cups sugar
1 cup milk
2 tablespoons butter
1 package dates
1 cup nut meats

1. Mix the sugar, the milk, and the butter, and boil this mixture until the soft-ball stage (238° F.) is reached.
2. Add the dates which have been stoned and chopped. Beat the mixture until the dates are well blended.
3. When cool, knead until stiff. Add the nuts and shape the dough into a roll.
4. Put it in a cold place for 24 hours. Slice as desired.

Popcorn balls

Yield: 15 large balls

1 cup light molasses
1 cup dark corn sirup
1 tablespoon vinegar
3 tablespoons butter
3 quarts corn, popped
½ teaspoon salt

1. Mix the molasses, the sirup, and the vinegar in a sauce pan and cook the mixture until the hard-ball stage is reached. After the soft ball stage (240° F.) is reached, constant stirring is necessary.

2. When the sirup is done, add the butter and stir only long enough to blend all well.
3. Pour the cooked sirup slowly over the salted popped corn and mix it well.
4. Form the corn mixture into balls with the hands, using a light but firm touch. Greased or wet hands will help in handling the balls.

SANDWICH FILLINGS

Eggs

Chopped hard-cooked egg with celery or cabbage and salad dressing.
Chopped hard-cooked egg with chopped pickle.
Sliced hard-cooked egg with lettuce and salad dressing.
Scrambled eggs and crisp bacon.

Fish

Flaked salmon, or tuna fish, with cabbage, onion, and salad dressing.
Sardines, chopped and mixed with watercress and salad dressing.

Cheese

Ground American cheese with cream to moisten, pickles, nuts, or pimento.
Cottage cheese on one buttered slice and jam or honey or marmalade on the other buttered slice.
Cottage cheese with carrots, diced onions, chopped nuts, crisp diced bacon, and salad dressing.
Cream cheese and shredded pineapple or dates or nuts.

Vegetables

Lettuce, or shredded cabbage, or raw spinach or water cress or diced celery mixed with salad dressing.
Lettuce, tomatoes, and cucumber.
Shredded cabbage and carrot.
Grated carrot and chopped raisin.

Peanut butter

Peanut butter mixed with jam, jelly, marmalade, or honey.
Peanut butter mixed with ground dried fruits.
Peanut butter mixed with mashed bananas.
Peanut butter mixed with shredded carrots.

Dried fruit

Fruit sandwich filling. (See recipe under fruit recipes, page 65.)
Raisins and nuts ground and moistened with cream.
⅔ raw carrots with ⅓ dried fruits and salad dressing.

INDEX

	PAGE
Appetizers for dinner	49
Apples, importance of	22, 23
Raw, source of vitamin C	9
Apricots, source of iron	8
Bacon, source of fat	8
Beans, dried, source of vitamin B	9
Navy, source of iron	8
Source of protein	8
Beef, appearance of	71
Cooking of	71, 72
Food value of different cuts	71
Tender and less tender cuts	71
Beet sugar	40
Beverage for dinner	49
Body, composition of	7
Breads for breakfast	43, 44
Source of starch	8
Whole grain, source of cellulose	8
Iron	8
Phosphorus	8
Vitamin B	9
Breadstuff for dinner	49
Breakfast	43, 44
Buffet table service	52, 53
Bulbs, used as food	19
Butter	17
Source of fat	8
Vitamin A	8
Buttermilk	16
Source of pellagra-preventive factor	9
Cabbage, raw, source of vitamin C	9
Calcium, best sources of	8
In milk	15
What it does for body	8
Cane sirup	40
Sugar	39
Carbohydrates, best sources of	8
What they do for body	8
Cellulose, what it does for body	8
Cereals for breakfast	43, 44
Recipes using	76–80
Source of starch	8
Whole-grain, source of cellulose	8
Copper	8
Iron	8
Phosphorus	8
Vitamin B	9
Chairs, arrangement of, at table	52
Cheese, food value of	17
In sandwiches	82
Source of calcium	8
Phosphorus	8
Protein	8
Riboflavin	9
Vitamin A	8
China, arrangement of	51, 52
Cocoa, source of water	9
Cooking, effect of, on fruits	24
Vegetables	24
Copper, best sources of	8
What it does for body	8
Corn sirup	40
Cottage cheese	17
Cover, at table	50
Cream, source of fat	8
Vitamin A	8
Daily food guide	41
Dessert for dinner	49
Lunch	44
Dinner, appetizers for	49
Beverage for	49
Breadstuff for	49
Dessert for	49
Meat for	48
Pattern for	48
Potatoes for	48
Soup for	48, 49
Vegetable for	48, 49
Eggs, for breakfast	43, 44
Food value of	25, 26
How to care for	67
How to cook	67
In sandwiches	82
Minerals in	26
Protein in	26
Recipes using	67–71
Source of phosphorus	8
Protein	8
Riboflavin	9
Vitamins in	27
Egg yolk, source of fat	8
Iron	8
Vitamin A	8
Vitamin B	9
Vitamin D	9
Energy, from fruits and vegetables	20
Supplied by foodstuffs	8
Fat, in milk	15
Best sources of	8
What they do for body	8
Figs, source of iron	8
Fish, appearance of	74
Cooking of	74
In sandwiches	82
Source of protein	8
Flowers of vegetables, used as food	19
Food, definition of	10
Food value of liver	29
Meat	28
Foods from grains	30–33
Needed for good health	7–10
Foodstuffs, six groups of	8–10
Sources of	8, 9
What they do for body	8, 9
Fruit, dried, in sandwiches	82
Source of cellulose	8
Iron	8
Sugar	8
Effect of cooking on	24
Energy from	20
Food value of	18, 19
For breakfast	43
Lunch	44
Packed lunch	45
Fresh, raw, source of cellulose	8
Juices, source of water	9
Minerals in	20, 21
Protein in	20
Source of copper	8
Vitamin B	9
Water	9
Sugar	39
Fruits, vitamin A in	21
Vitamin B in	21
Vitamin C in	21
Glassware, arrangement of	51
Grain, parts of seed	31
Grains, contribution to meals	31, 32
Grapefruit, source of vitamin C	9
Growth, rate of, for boys	11
Girls	11
Health, essentials for good	6
Heart, source of riboflavin	9
Height, average, for boys	11
Girls	11
Honey, source of sugar	8
Used as sweet	39
Hot dish for breakfast	43

PAGE

Iron, best sources of ... 8
In whole-grain foods ... 32
What it does for body ... 8
Iodine, best sources of ... 8
What it does for body ... 8

Kidney, source of pellagra-preventive factor ... 9
Riboflavin ... 9
Vitamin A ... 8

Lamb, appearance of ... 72
Cooking of ... 73
Removing fell ... 73
Leaves of vegetables, used as food ... 19
Lemons, source of vitamin C ... 9
Linen, table ... 49, 50
Liver, food value of ... 29
Source of copper ... 8
Iron ... 8
Pellagra-preventive factor ... 9
Riboflavin ... 9
Vitamin A ... 8
Vitamin B ... 9
Vitamin D ... 9
Lunch, bought at school ... 45, 46
Containers ... 45
Equipment for school ... 46
Pattern for ... 44
Packed ... 45

Macaroni, source of starch ... 8
Main dish for lunch ... 44
Maltose ... 39
Maple sirup ... 40
Margarines ... 17
Meal planning ... 41–49
Meals, to make attractive ... 42, 43
Measurements, table for ... 60
Meat, amounts to buy ... 30
Broth ... 30
Ease of digestion of ... 30
Food value of ... 28
For dinner ... 48
Fresh, lean, source of pellagra-preventive factor ... 9
How much to eat ... 29
Lean, source of iron ... 8
Riboflavin ... 9
Minerals in ... 29
Protein in ... 29
Source of protein ... 8
To care for ... 71
Vitamins in ... 29
Menus for winter day ... 41
Milk, condensed ... 16
Dried ... 16
Evaporated ... 16
Food value of ... 14
For breakfast ... 43, 44
Lunch ... 44
Packed lunch ... 45
Kinds of ... 15, 16
Pasteurized ... 16
Products ... 16, 17
Raw ... 15
Recipes using ... 60–62
Source of calcium ... 8
Pellagra-preventive factor ... 9
Phosphorus ... 8
Protein ... 8
Riboflavin ... 9
Vitamin B ... 9
Water ... 9
Sugar ... 39
Vitamin D, source of vitamin D ... 9
Whole, source of vitamin A ... 8
Minerals, best sources of ... 8
In eggs ... 26, 27
Fruits and vegetables ... 20
Meat ... 29
Milk ... 15
Whole-grain foods ... 32
What they do for body ... 8

PAGE

Molasses, source of calcium ... 8
Iron ... 8
Sugar ... 8
Used as sweet ... 40

Nutrients ... 10
Nuts, source of fat ... 8
Protein ... 8
Vitamin B ... 9

Oats, rolled, source of iron ... 8
Oil, cod-liver, source of iodine ... 8
Vitamin A ... 8
Vitamin D ... 9
Halibut liver, source of Vitamin A ... 8
Vitamin D ... 9
Oils, fish, source of vitamin A ... 8
Vitamin D ... 9
Sources of fat ... 8
Onions, source of vitamin C ... 9
Orange juice, source of calcium ... 8
Vitamin B ... 9
Vitamin C ... 9
Oysters, source of copper ... 8

Peanut butter in sandwiches ... 82
Source of fat ... 8
Peas, dried, source of protein ... 8
Vitamin B ... 9
Pellagra-preventive factor, best sources of ... 9
In green vegetables ... 22
What it does for body ... 9
Peppers, raw, source of vitamin C ... 9
Phosphorus, best sources of ... 8
In milk ... 15
Whole-grain foods ... 32
What it does for body ... 8
Pork, appearance of ... 72
Cooking of ... 72
Food value of different cuts ... 72
Lean, source of vitamin B ... 9
Potatoes, cooked, source of vitamin C ... 9
Importance of ... 23
Source of starch ... 8
Poultry, appearance of ... 74
Cooking of ... 74
Source of protein ... 8
Protein, best sources of ... 8
In eggs ... 26
Fruits and vegetables ... 20
Meat ... 29
Milk ... 15
What it does for body ... 8
Prunes, source of iron ... 8

Recipes ... 60–82
Apple and date salad ... 65
Bacon ... 75
Baked apples ... 64
Baked potatoes and tomatoes ... 62
Baking-powder biscuits ... 77
Bread pudding ... 70
Brown stew ... 75
Cake, angel food ... 70
One-egg ... 80
Plain butter ... 80
Sponge ... 70
Chocolate cornstarch ... 62
Cocoa sirup ... 62
Cornstarch pudding ... 62
Creamy rice pudding ... 61
Cream soups ... 61
Custard, baked ... 69
Soft ... 68
Date bars ... 65
Eggs, baked ... 67
Cooked in shell ... 67
Scrambled ... 68
Floating island ... 69
Fruit sandwich filling ... 65
Hot-water gingerbread ... 79
Meringue ... 69
Panama salad ... 66

PAGE

Prune pudding ... 65
Queen of puddings ... 70
Refrigerator rolls ... 79
Salad dressing, boiled ... 66
French ... 64
Salmon loaf ... 76
Sandwiches ... 82
Soup, cream of tomato ... 61
Soups, cream ... 61
Sweets, candied orange or grapefruit peel ... 81
Date and nut roll ... 81
Popcorn balls ... 81
Swiss steak ... 75
Using cereal foods ... 76–80
Eggs ... 67–71
Milk ... 60–62
Vegetables and fruit ... 62–67
White sauces ... 60, 61
Whole-grain quick bread ... 77
Whole-wheat muffins ... 76
Yeast bread ... 78
Vitamin vegetable salad ... 63
Riboflavin, best sources of ... 9
In green vegetables ... 22
What it does for body ... 9
Rice, source of starch ... 8
Roots, used as food ... 19

Salmon, source of pellagra-preventive factor 9
Vitamin A ... 8
Vitamin D ... 9
Salts and peppers, arrangement of ... 52
Sandwich fillings ... 82
For packed lunch ... 45
Sea-foods, source of iodine ... 8
Seed containers used as food ... 19
Seeds, used as food ... 19
Serving dishes ... 52
Silver, arrangement of ... 50
Use of flat ... 57–59
Sirup, cane, ... 40
Corn ... 40
Maple ... 40
Sorghum ... 40
Skimmilk ... 16
Sorghum cane ... 40
Sirup ... 40
Soup for dinner ... 48, 49
Source of water ... 9
Spinach, source of vitamin C ... 9
Starches, best sources of ... 8
What they do for body ... 8
Substitutions in cooking ... 60
Sugar, beet ... 40
Best sources of ... 8
Brown ... 40
Cane ... 39, 40
Effect of, on body ... 38
In milk ... 15
Occurrence in nature ... 39
Refined ... 39, 40
Sources of ... 38
What it does for body ... 8
Sunshine, source of vitamin D ... 9
Sweets, energy value of ... 38
For packed lunch ... 45
Place of, in meals ... 37
Recipes for ... 81–82

Table decorations ... 52
Manners ... 56, 57
Service, buffet ... 55, 56
Informal family ... 53, 54
Setting ... 49–52
Tapioca, source of starch ... 8

PAGE

Temperature for sugar sirup ... 81
Of body, maintenance of ... 8
Oven, for baking ... 60
Roasting ... 60
Time table for cooking vegetables ... 63
Tomato juice, source of vitamin B ... 9
Tomatoes, source of pellagra-preventive factor 9
Vitamin A ... 8
Vitamin C ... 9
Tubers, used as food ... 19
Turnips, source of vitamin C ... 9

Veal, appearance of ... 73
Cooking of ... 73
Cuts of ... 73
Vegetables, effect of cooking on ... 24
Energy from ... 20
For dinner ... 48, 49
Lunch ... 44
Green, leafy, source of calcium ... 8
Pellagra-preventive factor in ... 22
Riboflavin in ... 22
Source of riboflavin ... 9
Vitamin A ... 8
In sandwiches ... 82
Minerals in ... 20
Parts of, used as food ... 19
Protein in ... 20
Source of cellulose ... 8
Copper ... 8
Iron ... 8
Vitamin B ... 9
Water ... 9
Vitamin A in ... 21
B in ... 21
C in ... 21
Yellow, source of vitamin A ... 8
Vitamin A, best sources of ... 8
In fruits and vegetables ... 21
What it does for body ... 8
B, best sources of ... 9
In fruits and vegetables ... 21
What it does for body ... 9
C, best sources of ... 9
In fruits and vegetables ... 21
What it does for body ... 9
D, best sources of ... 9
What it does for body ... 9
Vitamins, best sources of ... 8
In eggs ... 27
Meat ... 29
Milk ... 15
Whole-grain foods ... 33
What they do for body ... 8

Water, best sources of ... 9
Loss of, from body ... 36
Need of body for ... 34
Sources of ... 34–36
What it does for body ... 9
Weight, as an indication of health ... 11
Rate of growth for boys ... 11
Girls ... 11
Wheat, diagram of grain of ... 30
Germ, source of pellagra-preventive factor 9
Riboflavin ... 9
Kinds of ... 33
Whole grain foods furnishing bulk ... 33
Minerals in ... 32
Versus refined ... 32
Vitamins in ... 33

Yeast, source of pellagra-preventive factor ... 9
Riboflavin ... 9
Vitamin B ... 9

NOTES

NOTES

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